

# **LOW VISION AHEAD**



PROCEEDINGS OF THE  
FIRST AUSTRALIAN PACIFIC CONFERENCE ON

**LOW VISION**

MELBOURNE - AUSTRALIA - MAY, 1980.



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# LOW VISION AHEAD

Proceedings of the  
FIRST AUSTRALIAN PACIFIC CONFERENCE ON LOW VISION  
Under the Auspices of  
Australian National Council of and for the Blind

Held at the  
Association for the Blind  
H.M. Lightfoot Centre  
454 Glenferrie Rd., Kooyong  
Victoria, Australia

19-21 May, 1980

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## FOREWORD

Conferences come and go. There are so many, involving tremendous effort and concern on the part of a few. The organizers wait for the opening with the nervousness of the promoters on the first night of a play. Then it is over and the debits and credits are added up, the financial and message content. Was it profitable after all?

From the comments made and letters received the First Australian Pacific Conference on Low Vision was an outstanding success.

The seed of the conference was a growing feeling within the Australian National Council of and for the Blind (ANCB) that there was a need for people involved in the diverse range of emerging low vision programmes to share ideas and experiences with each other and with colleagues in the Asian Pacific Region.

The aim of the conference was to discuss standards, procedures and techniques of low vision care and forms of service delivery. It was attended by medical, optometrical, medical ancillary, educational and administrative personnel, users and policy makers. Excellent material was presented by all groups represented. Their papers follow and are recommended reading.

The challenge is now to the representatives from the various countries present to pass on the knowledge acquired, enabling informed discussion and decision making as a precursor to the formulation of policy and appropriate action.

I would like to thank the ANCB Organizing Committee and the General Committee and staff of the Association for the Blind, who were responsible for the efficient organization and friendly atmosphere of the conference. I would also like to thank Ruth Mushin for editing the conference proceedings.

A handwritten signature in dark ink, reading "John W. Wilson". The signature is fluid and cursive, with the first name "John" being more prominent and the last name "Wilson" following in a similar style.

John W. Wilson  
Chairman  
Conference Organizing Committee



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## PRACTICE AND DEVELOPMENT OF SERVICES







## OPENING ADDRESS

The Hon. Michael Mackellar

I am indeed pleased to have been invited to open this, the first Australian Pacific Conference on Low Vision. The care and rehabilitation of the visually impaired has attained high standards in Australia and this conference provides an important opportunity for Australians and their neighbours to share their knowledge and experience. I congratulate you on having the initiative to hold this conference and I welcome this opportunity to address a few words to you at its start.

When invited to address today's conference, the chairman of the organizing committee, Mr. John Wilson, suggested that I should speak on the government's attitude to new and developing areas of health and medical services under the difficult economic conditions we currently face.

However, before doing so I would like to say a few words in relation to your conference's general topic.

The World Health Organization's "International Classification of Diseases" recognizes low vision as a separate and distinct category of disability from blindness. It recognizes that individuals may have considerable impairment but at the same time worthwhile, usable residual vision.

Low vision care is a relatively new field of particular concern. Much has been done for the blind in the past by the professions, voluntary agencies and governments. But there have been some inhibitions in the provision of special supportive services for those persons who are not blind, yet have considerable sight impairment. Some of the responsibility for this lies with the people suffering from visual impairment. They often cling to fiction that their eyesight is "perfect", even to the point of

denying serious sight deficiency and resisting any suggestion that they could be helped if they acknowledged their disability.

Consequently, there has been a reluctance on the part of such individuals to seek the assistance of the voluntary agencies and professional bodies which have done so much for the blind.

Happily that situation is changing. It is now being increasingly accepted that the professions and voluntary groups which have such a fine record of achievement for the blind have the skills, the technology, experience and understanding to help rehabilitate and assist the low vision patient. The key to future success in this field would appear to be to assist the low vision patient to recognize that he or she can, with training and the provision of suitable low vision aids, maximize the use of residual vision.

Much is now being done towards the prevention of blindness. The number of rehabilitative services provided and the quality of those services have risen dramatically in recent years. So too has the quality of life of those who have low vision.

I would particularly like to mention the work of the Low Vision Clinic, established by the Victorian Association for the Blind at Kooyong in 1972. Dr. Alan Johnston, a consultant optometrist at the clinic, commented in his article in the Australian Family Physician in 1978 that it seems puzzling that an agency for the blind has established a clinic aimed at preserving and improving sight. Yet, who is more acquainted with the handicaps of the sightless? The Victorian Low Vision Clinic is a specialist centre offering clients the benefits of professional assessment and assistance of scientific aids designed to maximize the use of remaining vision wherever possible. Since its establishment in 1972 the clinic has expanded enormously, justifying the original belief that an important need for the visually impaired was not being catered for by conventional means. The clinic has now grown into a large multi-disciplinary complex.

It is encouraging to note that low vision services being provided today are not solely medical services. They are a balanced mix of services appropriate to the needs of the individual client. Vision impairment affects individuals in different ways because of the differing abilities of people in this position to deal with the situation. It is therefore important that services be related to more than a person's medical and psychological needs. They should also take into account educational, vocational and social factors.

I would hope that more attention could be given to the early identification of people "at risk" as prevention is better than cure. As many of you here today will know, health prevention and promotion are areas currently being pushed to the forefront in health policy and it will be necessary to consider their relevance also in relation to vision.

Health prevention and promotion measures are being increasingly adopted because of the recognition that many of today's health problems can be prevented. This recognition has, in many ways, been forced on health authorities because of the high cost of ill health and the difficult economic circumstances we now find ourselves in. As Bernard Dixon, the editor of New Scientist noted in his book The Magic Bullet, the first steps in this direction in Britain came "at a time of unusually severe economic ill health". He added: "The notion that prevention can be cheaper than cure carries correspondingly greater force than before." But be that as it may, these are difficult economic times and the vast sums of money spent on our nation's ill health have not necessarily produced a far healthier society. Thus it is correct to see if we are getting value for our money.

I am sure that the majority of people present here today would know that Australia's health bill is now running at over \$8,000 million annually. But do you know that in 1972-73 the corresponding figure was only \$2,500 million? So in a period of seven years, this country's health bill has increased by a very hefty 320%. And over the same period Commonwealth outlays on health have increased by 420%. This year it is estimated that the Commonwealth's outlays in the health area will total about \$3,200 million, compared with \$766 million in 1972-73.

On coming to office the Government set about to overcome the dual problems of high inflation and a stagnant economy. A major plank in the Commonwealth's policies for getting inflation under control and the economy going again is the reduction of the size of the budget deficit by rigorous expenditure restraint. The Government believes that sustainable economic recovery, and the jobs that come with recovery, cannot be achieved unless we bring inflation under control by restraining expenditure and significantly reducing our calls on the capital market.

The Government is also committed to a policy of expenditure restraint for philosophical reasons as well as economic considerations. This Government believes that individuals, and not politicians or bureaucrats in faraway Canberra, should make decisions about their lives.

As part of this approach we believe that it is important that governments should not place too great a call on people's financial resources. Resources should be in the hands of the community and it is for individuals to choose how these resources should be spent.

Governments should not meet every possible demand individual members of society may have. As my colleague the Minister for Finance, Mr. Eric Robinson, recently put it - Governments should provide a safety net, not a crutch.

The Government's tax reforms have been made with this philosophical approach in mind. And so have the hard decisions on expenditure we have had to make. As I am sure all of you here today would acknowledge, a necessary corollary of tax cuts must be cuts in expenditure.

This tough-minded approach to Government expenditure must include health because of its importance in the budget context. However, I should stress at this point that this approach has not been at the expense of the provision of high quality basic health care for all Australians. The Government is committed to ensuring that this nation's citizens have reasonable access to high quality health care.



What this approach means is that we should closely assess the efficiency of existing health care delivery systems and the likely benefits of new ideas and approaches in the health area. We need to do so to ensure that we get good value for money. This is especially so in the current economic circumstances. We also need to ensure that new technological advances are properly assessed, that service overutilization does not occur and that we do not see an excess capacity situation developing.

In looking at ways of containing costs in the health area, the Government must look firstly to hospitals because they are the largest single health item and because there are probable inefficiencies in this area.

Of our \$8,000 million national ill-health bill, about \$7,440 million or 93% is spent on current expenditure. Of this, about \$3,500 million, or nearly 50%, is spent on hospitals. This year the Commonwealth will provide about \$1,500 million for hospital services and benefits.

The high likelihood of inefficiencies in our hospital system can be seen from the report of the South Australian Public Accounts Committee on the financial arrangement of the South Australian Hospitals Department.

As some of you may be aware, the Public Accounts Committee was highly critical of budgetary and staffing arrangements.

The Committee particularly concluded that budgetary allocations to hospitals were not related to a meaningful level of activity and that the costs of hospital departments were not identified. It found that hospitals did what some would expect many Commonwealth departments to do: the previous year's expenditures were used as the basis for the preparation of forward estimates without adequate review of performances.

In the staffing area, the Committee was concerned to find that the central office did not know how many staffing positions existed in the health services field. One can understand this concern when we learn that between 1967 and 1978 staff numbers in hospitals increased by 159% and in the central office by 205%, while there was a 28% increase in average daily inpatients.

Concern about inefficiency in the hospitals area last year resulted in the Government establishing an Enquiry into the Efficiency and Administration of Australia's Hospitals. Significantly two of the three members of that Commission are businessmen rather than health professionals. The Government is looking forward with great interest to their report later this year.

Because of the high cost of institutional care, much could be gained by programmes designed to keep people out of institutions while still providing the appropriate level of treatment and care. And, as I noted earlier, in view of the high cost of ill-health in general, properly designed programmes demonstrating the importance of adopting healthier lifestyles must be particularly cost effective.

After hospitals, the Commonwealth medical benefits scheme is the largest single expenditure item in the health area. This year the Commonwealth is expected to spend close to \$600 million of taxpayers' funds in assisting people to meet their medical bills through the medical benefits arrangements.

As I am sure you will acknowledge, \$600 million annually spent on one government programme involves a lot of money. I am also sure that many of you will know that there are strong pressures on the Government to extend this programme to cover a number of "non-medical" services. Requests for such extensions generally come from representatives of a particular service group or their patients. As such they look at their request as an isolated one that would not involve too large an increase in government spending. They therefore fail to take into account "duplicate" claims made in respect of a myriad of other non-medical services. If, for example, the Government decided to extend the medical benefit arrangements to psychologists, it would also be faced with

the problem of justifying why the arrangements could not also have been extended to cover the wide range of other services such as those performed by acupuncturists, physiotherapists and podiatrists. The all-up cost of such a move would be great indeed. It would also be in direct conflict with the Government's economic policy.

As I mentioned earlier, the Government must pay particular attention to the use of modern technology in the health care area. As the Report of the Committee established by the Commonwealth in 1977 to look at the applications and costs of modern technology in medical practice noted: "The rising costs of health care can be partly explained in terms of the impact of the growth of modern technology. In the United States, it has been estimated that 50% of the increase in costs of hospital care from 1965 to 1974 was directly or indirectly related to medical technology".

There is therefore a particular need to look at whether the expending of funds for introducing new technology into the health delivery system is cost-effective. It could well be that the extra resources consumed through further increases in the use of modern technology have only marginal benefits in terms of further improvements in health so that the costs involved cannot be justified and the resources involved could be better employed elsewhere.

I should also note that resources can be squandered through the adoption of "too much" technology. By this I mean that there may be an unnecessary duplication of equipment purchased by institutions, and even individual doctors, with a consequential incentive to overservice patients to justify the installation of that equipment and/or ensure that an appropriate rate of return is received.

I would suggest that one reason for such duplication is the fact that there is often considerable competition among hospitals, both public and private, to have the latest and most complete range of services, even if they are poorly utilized. I would also suggest that this could well be because proposals to hospitals for the purchase of innovations come principally from medical staff who are

generally more aware of the general benefits of technologies than administrators. Dare I say that these same people who present such acquisition proposals may only be aware of the possible benefits of new technology; they may not fully understand that the benefits involved do not justify the cost?

Teaching hospitals would also appear to be under pressure from universities to remain abreast of the latest technologies. And hospitals can often find that they are unable to attract necessary specialist staff unless they provide modern technologies. Thus we find, as the expert Committee's report I referred to earlier stated: "The purchase of sophisticated equipment in advance of an adequate clinical load ..... is common". And as this Committee also said: "This leads to a waste of public money, both in the purchase of the equipment and in the cost of the staff operating it".

I think you can see that the Government must take a very close look at new and developing areas of health and medical services because of the economic circumstances we find ourselves in. But that approach is not confined to new health and medical services; it must also be adopted with respect to existing services.

I believe all those present here today would acknowledge that I, as Minister for Health, am confronted with difficult problems in relation to health care delivery because of the current economic circumstances. However, I should repeat what I said earlier: this questioning approach to expenditure has not been, and will not be, at the expense of the provision of high quality basic health care for all Australians; the Government is committed to ensuring that all Australians have reasonable access to high quality health care.

I trust my statements this morning have fully met Mr. Wilson's request I referred to at the outset of my address. I also trust that this conference proves successful.



I would like to conclude my address by suggesting that you might wish to bear the following in mind when, over the next three days, you consider the future of the provision of low vision services; that is that the combined and coordinated use of medical, social, educational and vocational measures for the purposes of early detection, training and retraining of the individual to his highest possible level of functional ability should be the objective of all organizations interested in the welfare and advancement of handicapped people.

## THE WIDER CHALLENGE OF LOW VISION

John W. Wilson

Our Senior Social Worker has become interested in his ancestry and joined the local genealogical society. He tells the story of a rich American who commissioned a well known author to write the family history. There was the proverbial family skeleton in the cupboard, in this case Uncle William, whose life of crime ended in the electric chair. The author was told: "Now we don't want to hide the truth but perhaps you could skirt around it."

As it turned out, the author was an excellent skirter. His account came out like this: "Uncle William occupied a chair of Applied Electronics in one of our leading government institutions. He was held to the post by the closest ties and his death came as a real shock."

The impact of this conference will be lost if we skirt around the issues. At the same time, differing views should be accorded courtesy and respect. It is the thoughtful analysis of all the material presented that will indicate the lines along which future action should proceed.

My remarks are not a balanced presentation. My endeavour is to give a broad background of material which other contributors will not cover, mention only briefly major items on which other speakers will discourse and raise issues which otherwise we may only skirt around. These are all dealt with under seven "C"s.

Change

Since the Second World War there has been an explosion of knowledge in every area of human endeavour.

Just as when a bomb explodes, fragments of shrapnel fly in all directions, so with the explosion of knowledge. Fragments of learning have been showered with seeming abandon and disrespect all over the place.

Much of this knowledge is newly conceived and its understanding requires different thought processes to those which we customarily use. It is not just an extension and development of existing historical orthodoxy. It is the discovery of new realities.

Because this knowledge has not flowed neatly and evenly along the traditional, academic, professional and organizational channels slowly and painfully developed by man over the centuries, our established institutions have lost their coherence.

The turmoil which is presently spread over the entire spectrum of life is evidence that man has been unable to accept or adapt to the change which has occurred. In no area of life, whether corporate in the way of parliamentary, bureaucratic or organizational, or personal, whether mental, moral, spiritual or emotional, has man been able to adjust to change with sufficient rapidity to ensure harmonious living.

Further, we are unable to endure the stress which has accompanied this explosion of knowledge and consequent change. This is revealed in statistics which indicate that in our lifetime at least one in every ten of us will require psychiatric help. At a lesser level, it is shown by lack of clear thinking, illogical judgements, stubbornness and conversely indecision, which characterize so much of our behaviour.

From these remarks, I wish to emphasize a number of points. Firstly, the complex situation and daunting odds faced by anyone who seeks to apply and practise new knowledge in the health or blind service fields.

Secondly, to emphasize the need to retain our peace of mind, patience and sense of humour. Our cause is not helped if we drift into an adversary situation with those who oppose new knowledge and

its applications.

Thirdly, low vision knowledge is but a single cell in a whole new body of medical enlightenment, a grain of sand on a seashore. Its application is not glamorous, but for the relatively few who can benefit, it can mean a transformed life.

The priority given to low vision services will vary from country to country. For some countries I would think prevention of blindness and restoration of sight far more important. Others which should be active need prodding. There will also be considerable variation in the place low vision services occupy in government funding priorities. I trust delegates from the overseas countries represented at the conference will relate and interpret what is said in the context of their local situation.

#### Conquest

The change of which we have spoken is interwoven with conquest. In our sphere it is the conquest of new frontiers in every facet of medicine and ancillary services.

One segment of the new knowledge is electronics. Here there has been tremendous conquest. No longer is the issue the development of computers to carry out the wishes of man. The tables are turned. Computers are now imprisoned by the limitations of man's mind.

At the present time in the United Kingdom scientists are working on the birth of bionic man. The centre of research and development is Warwick University. Part of the development relates to sight and already some blind people participating in experiments have reported seeing flashes of light. Some of you have seen a television programme on this subject.

Concurrently with this, a new system of relaying visual information to blind persons is being evaluated at the Visual Prosthetics Research

Department, Inventive Industries, Fort Wayne, Indiana. This method involves tactile stimulation through a matrix of vibrating rods applied to a postage stamp area of skin over the forehead. The blind people participating are reported to be able to pick up and distinguish words.

At the technological level in the electronic field, we already have sonic directional aids for blind and low vision people, talking calculators, compressed speech machines, closed-circuit television and a reading machine of great ability which has not yet reached Australia. Dr. Alan Johnston will be speaking on technical developments in a more realistic way. I mention these facts to show the future is unlimited and the extent to which we must project our thinking.

A consequence of the increased knowledge and the resultant changes is seen in a recent submission to the Commission of Enquiry into the Efficiency and Administration of Hospitals. In this the Australian Hospitals Association makes the point that prior to the Second World War there was but a handful of medical specialities at both clinical and technical levels and few paramedical professions. The report points out that with increased knowledge all this has changed and professionalism in the health field has created new and distinct areas of practice which demand the allocation of specific duties to particular groups of people. A sequel of conquest then can be conflict between the professions. Shortly we will look at some sensitive areas in relation to low vision services.

The point I wish to make here is that medicine, science, engineering and a number of associated disciplines are all working together to explore and conquer new frontiers in health care, of which low vision is part.

No longer can one person, one profession, one organization retain and apply all knowledge in a specific field or have as its exclusive preserve all work in that field. In the specialized field of low vision service there has to be the cooperation of science, engineering, medicine and the allied professions if the patient is to receive the best service. To me this cooperation freely given is part of the



wider challenge of low vision service.

### Commitment

On a Sunday morning earlier this month I stood outside this hall on the oval and watched some four thousand entrants complete a run along the river from the city. Among them were twelve blind competitors. One was a young staff member of the Association for the Blind, Jeff McNeill, who completed the ten kilometres in thirty-eight minutes and finished among the leaders. His three hours daily training programme includes a run of sixteen kilometres.

In Western Australia, one lone sixteen year old blind schoolgirl, Janine Wilson, has combined study with intensive athletic training. So has Bob Faulkner, a twenty-one year old from Queensland, and Dian Temby of Victoria, a young married nursing sister who lost her sight in recent years.

Now their incredible mental stamina and the long hard physical grind has paid off. They are all members of the small group of top blind athletes of our nation who will represent Australia in the Olympic Games for the Disabled in Holland. All of them are pioneering new fields of conquest. All are the goalsetters for the young blind people of Australia. All are examples of real commitment.

Yet so illogical is our thinking that when it comes to health and welfare projects, many of us think that because we believe a project is worthwhile, government should immediately respond to our first submission. If it doesn't we tend to do one of two things: give up or go crying to the media prematurely. This is not commitment.

And when we come to the daily operation of a service there must be unwearying and meticulous attention to professional, administrative and financial detail. One must always remember a service is there for the benefit of the patients and put their needs first. This is the mark of a true professional. This is commitment.

Within Australia, guidelines for a Community Health Programme were set out in 1973 by the National Hospitals and Health Services Commission. We are honoured to have Dr. Sidney Sax, who was Chairman of that Commission, participate in this conference. Many of the principles then laid down can be applied to a low vision service. These principles to which we are committed are that it should be national in application, of high quality, readily accessible, reasonably comprehensive, coordinated and efficient and provided at local, regional and State levels. The service should be developed in consultation with the professional groups involved and, where appropriate, the involvement of the community to be served.

Further, the service should incorporate the most up-to-date knowledge and techniques available, provided by an appropriate range of staff. It should include a comprehensive range of facilities, back-up resources and supportive services, all coordinated. There should be continuity of services. There should be efficient management to support the professional teams and to ensure courteous and prompt care for the patients. There should be rehabilitation and supportive assistance for those with continuing disability and those who are unable to adapt to normal community living.

The objective of a low vision service from my viewpoint is to determine the precise location and measure the extent of the patient's residual vision. To evaluate his visual and physical functioning and, by the prescription of appropriate aids, both optical and non-optical, and such other supportive assistance that may be needed, enable the patient to live as independently and as effectively as possible within the general community.

We have within the Australian National Council of and for the Blind member agencies in each State who have a sincere commitment to these principles and objectives. In 1977, Sister Margaret Lawrence of this clinic was awarded a Churchill Fellowship to study low vision services overseas. In 1978, following her return and with the benefit of the notable report presented to the International Federation of National Ophthalmological Societies in which Dr. Colenbrander played a major part, a working party of the Australian National Council of and for the Blind produced a model specification for low vision

services. Since then, at Executive meetings, reports from the various States have shown a trend which causes some concern. The teamwork and cooperation which we had felt should have been relatively simple to achieve was not always forthcoming.

Our hope is that this conference will, among other things, provide an answer. It is a challenge to us all to express our views, to recognize or refute the value of the service, to embrace or reject cooperation. It is also an opportunity to accept a commitment to work for the best possible service in each of our States or countries.

#### Control

Low vision services are still in the early stages of development and there is no standard world pattern of control.

The location of clients are academic, general hospital, agency for the blind and private practitioner.

The key or controlling figure is variously ophthalmologist, optometrist, administrator, low vision therapist, nursing sister and social worker. I anticipate a later speaker will develop these two important aspects. I mention them now as background and to set the scene.

The position is, in three countries where we watch development closely:

Sweden: recognized as one of the leading countries in this area has twenty-three clinics, one in each county. In all cases they are based in the county hospital. A new professional called a low vision therapist is administrator of the clinic. This person also assists the ophthalmologist and optometrist and is responsible for instructing in the use of the aids prescribed. The ophthalmologist works six hours a week in the clinic, the optometrist is full time. All additional services are provided by the national blindness agency.



United Kingdom: amongst the blindness agencies one encounters a sense of shame at the lack of clinics. The few of a sort that do exist function in hospitals under the National Health Service. They have long waiting lists. Theoretically patients are referred as a natural progression when conventional spectacle correction is of no benefit. In reality the set-up I am told is extremely bureaucratic. Possibly the best known clinic is at Moorfields Eye Hospital in London. At Moorfields, overall ophthalmological care is the responsibility of the consultant ophthalmologist, but the freedom to arrange and conduct necessary tests, prescribe, fit and modify aids is delegated to the principal ophthalmic optician.

So poor is the official system that the BBC "In Touch" Radio programme for the blind is recommending people prepared to buy an aid to go direct to the Association of Optical Practitioners. The Disabled Living Foundation too has a large display of aids and employs an ophthalmic optician to run a special telephone advisory service for the visually impaired and to give advice on aids. Many other disabled living centres throughout the country carry a limited supply of magnifiers for sale over the counter. This can mean the ophthalmologist is by-passed and serious disease goes undetected.

United States: many of the services have been funded on government grants of limited duration. This has led to a lack of continuity and the loss of some services which had achieved a high standard of care during the period of their existence. In 1972/73 a survey found 114 facilities. In 1976 a review found over 250 low vision facilities.

We have written for details of this latter survey but unfortunately they have not yet come to hand. In the earlier survey just over half of the facilities were in a medical setting with ophthalmologists as directors. The few providing a comprehensive service were mostly associated with a blindness agency, for example, Dr. Eleanor Faye and the New York Lighthouse.

Some details of the latter survey arrived only last Friday afternoon. A quick perusal left me with the impression of greater combined ophthalmological / optometric involvement and cooperation and an increasing number providing comprehensive services. Hopefully our

speakers from the United States will be able to comment more fully on their situation.

## Content

In Australia during the early seventies there was a period of intense activity in the health service field. A number of reports of great excellence commissioned by government were prepared. Government departments, service agencies, the professions and the community met, consulted and debated keenly. Out of all this was slowly emerging some firm ground on which all could have met and worked together to build services the world would have looked at with envy. Such are the vagaries of politics that our opportunity was lost. However, among the relics and memories of those heady days is an important principle which receives wide acceptance: namely, that services should be comprehensive.

Few patients coming to a low vision clinic have a sight problem only. They may not be sick and they may not be seeking rehabilitation, yet there are elements of medical, social, educational and vocational rehabilitation in the service. To meet all these problems the clinic requires a wide range of professional staff.

I have no doubt that a comprehensive service at this point of time is of the utmost benefit to the patients and in the long term saves government money.

The Low Vision Clinic here in Victoria together with some others in Australia are funded under the Health Insurance Act, with a Health Programme Grant. Here I would be remiss if I did not pay tribute to the prompt response and fair treatment received from senior government officers in so far as the direct eye service is concerned.

Detail on the content of low vision services and the role of the various professions will be given by other speakers. I do wish to emphasize a gap, a seemingly illogical gap in policy in so far as the

comprehensive nature of the service is concerned.

In the 1975 Circular of the Department of Social Security on Health Programme Grants the point was made that eligible services may be supported by a wide range of allied health professionals who would be included in the funding. Later that year the report of the Health and Welfare Taskforce said: "While the precise application of Health Programme Grants is still being discussed by the Hospitals and Health Services Commission and the Department of Social Security, it now appears likely grants will leave two areas uncovered: certain services under Medibank and non-scheduled services provided by salaried or sessionally paid professionals operating outside of hospitals".

The statement concluded: "These gaps in health and related services allow great scope for confusion of individuals and organizations seeking support".

Both the State and Australian governments and all departments involved continually emphasize the need for comprehensive services. Both the Department of Social Security and the Hospitals and Health Services Commission indicate approval of the principle in their published material. Nevertheless, the salaries of allied health professionals involved in rehabilitation within the clinics are not subsidized. One asks: "Why not"?

Most of our patients are in the elderly group and as recently as March this year, the Commonwealth Minister for Health, the Hon. Michael MacKellar, speaking at the inauguration of the Commonwealth Institute of Health in Sydney, said in relation to the ageing of the Australian population: "I would particularly stress the need for rehabilitation services for the aged in order to encourage and prolong their contribution as full and productive members of society and to improve their quality of life". This is the purpose of the clinic and we cannot understand the lack of support.

Comment on this aspect from one of our government speakers would be helpful.

## Challenge

I propose to deal with this heading as a challenge to resolve conflict. Not conflict in the sense of a hot of cold war which so dominates international thinking at this time, but conflict in the sensitive areas of counteraction, controversy, competition.

As the senior profession, let's mention medicine first. In general the approach of the profession always has been, and still is, conservative. At times it seems loath to accept the challenges offered by more enterprising colleagues even when the case for change is well established. This may be wise, I am not competent to judge. What I do know is that the profession is under pressures to a degree never before experienced.

Let me demonstrate with one quotation. The Medical Journal of Australia, 8th March, 1980, speaks of the growing excess of medical practitioners. It says: "What does all this mean for future practice in Australia? There will undoubtedly be greater competition for patients. There will also be increasing competition and probably demarcation disputes with the specialists and with allied health professionals who more and more seek an independent role in the field of health care delivery and who, it would appear, are also moving to a position of over-supply."

The article goes on to say: "An excess of doctors will also tend to lower the competence of individual doctors. At least one quarter of existing Australian specialists in medicine, surgery, obstetrics and gynaecology are not receiving sufficient continuing clinical work to maintain high standards of competence and skill."

I sense some unease among the specialty of ophthalmology, possibly for the same reasons.

The leaders of the colleges of optometry, in both Sydney and Melbourne, have been quite far-sighted and forward-thinking and the colleges have become involved in the work and students now receive training in low vision. This is having an effect, particularly amongst the more recently qualified graduates who are now seeing low vision services as



an extension and integral part of the profession.

However, I again sense insecurity. Firstly, at the possible over-supply of optometrists. In the March, 1980, issue of the Optometric Newspaper, mention is made of the fact that a record number, namely one hundred and thirteen students, graduated last year. Secondly, because of the possible inroads that may be made into their work by ophthalmologists as that profession in turn becomes over-supplied. I recall reading, but unfortunately could not put my hand on the article, that in the United States, numbers of ophthalmologists are now fully engaged in the prescription of spectacles.

Orthoptists are a group who I believe have a role to play in this service. In some States they are cooperating and are keen members of the team. In other States, and I specifically mention Victoria, while individual members would be more than happy to participate, their leaders have ruled against involvement. Orthoptists could well be our counterpart of the low vision therapists of Sweden and the low vision technicians of the United States.

The blindness agencies are caught in a conflicting situation. Traditionally, their services have been directed towards assisting blind people to manage without sight within a protected, segregated system. Now with an estimated 80% of blind people retaining useful residual vision, and with the advent of low vision aids, the objective is to maximize the use of the remaining vision and keep them integrated within the community. These two objectives are in direct conflict. There is also a view strongly held among some totally blind people that far too much emphasis is being given to services to low vision people at the expense of services to the totally blind.

Another profession vitally interested in low vision is the educators. In Singapore and Brisbane, for example, services have been established first at schools because this is where the drive and impetus arose. There is little doubt that whether in a school for the blind or mainstreamed, all children with poor vision should be assessed for aids. I think a fair summing up of the position within Australia is that all teachers concerned with the visually impaired are doing their utmost to ensure that children in their care receive proper vision assessment and aids.

This desire, I am led to believe, is being partly frustrated, particularly within the State education system, by an Australian Medical Association directive of many years standing. This is to the effect that School Medical Health doctors refer back to the doctor responsible for primary care, in other words, the child's general practitioner. I have been made aware of a feeling that far too frequently neither the general practitioner nor the child's family take the further action necessary.

Overall one may conclude that in our attitudes there is a sense of fear for the future, professional insecurity, some doubt as to the competence of other disciplines and defence of established territorial rights. These in themselves are not wrong, nor are they exclusive to any particular section of the community. For example, the government in power always believes it is the best one for the country and even in a democratic system, as we know from experience, will go to extreme lengths to retain power. The public service honestly believes that in its strength is the stability of the nation, and fiercely resists efforts to move it out of its rut.

In examining a patient the searching hands of the physician probe for the tender, sore spots. Their location assists his healing diagnosis. My objective in this section is the same. A challenge and prompting to examine our own motivations and attitudes more closely. The number of sincerely held misconceptions we have of each other are many. When we step outside our self-imposed boundaries and prejudices, have contact with and come to understand our colleagues and their work, we are all enriched. This conference provides an unrivalled opportunity to meet on common ground and to do just this. Our response is the measure of our maturity.

#### Cost

One factor consciously or sub-consciously ever present in our minds is cost. Health and welfare services of all countries face the continuing challenge of unlimited demand versus limited resources.

If continuing government financial cut-backs in the United Kingdom and United States and our own government statements are a reliable guide, the position will worsen in at least the first half of the eighties.

Throughout the world low vision services are variously funded individually or by a combination of, government grant, either direct or through the health or university systems, patients' fees, donations and charitable trusts.

I assure government representatives that no section of low vision work is seeking to promote itself in order to justify its existence, or for financial gain.

My observation of the low vision area here in Australia is that positive controls are constantly applied to the cost content. For example, later statistics will show the source of the greatest number of referrals to the Kooyong Clinic is ophthalmologists. The confidence established is such that these referrals are normally accompanied by the referring ophthalmologist's eye report. This eliminates the need for further ophthalmological examination, so saving time and reducing cost.

The optometrists practising in the clinic use a common-sense approach in respect of the number of vision tests which are applied and look for practical results which have every day value.

One area which requires more attention is the use by the patient of the aid prescribed. There have been expressions of opinion both here and overseas that the percentage of patients who do not persist in the use of the aid is higher than it ought to be. There are a number of hypotheses as to why this might be so. Here in Victoria sufficient patients have been through this clinic to permit an in-depth study. We are hopeful some funding may be available from the National Health and Medical Research Council for this purpose.

The clinic has a substantial success rate, details of which will be given later. I personally maintain that even if this were not so, the fact of early referral means that ancillary health professionals are able to work on many problems, for example, solving disturbances at home with family, giving personal counselling, instructing in

orientation and mobility, teaching the low vision patients how to care for themselves in the areas of grooming, eating, social graces, home management, cooking and so on. This enables a confident approach to life and continued participation in community activities, justifying the total expenditure and saving the Government heavy cost in later years.

### Conclusion

To sum up I have endeavoured to point out that we are living in a time of the world's history where knowledge is increasing and change taking place at unprecedented speed. Because of our inability to adjust with sufficient rapidity the introduction and practice of new knowledge, even with the best of goodwill, does create problems.

Although they have only a short history, it is already clear throughout the Western World that low vision services are here to stay. This presents a challenge to us and requires a resolute commitment on our part to ensure that those persons who can benefit receive a high quality service while keeping costs to a minimum.

The establishment of such services in our countries, the pattern of their development and service, the visual and other benefits to be gained by patients are issues to which this conference will direct itself.



## THE TECHNICAL CHALLENGE OF LOW VISION

Alan W. Johnston

When told of my title for this address I was set to thinking how I might include under the one umbrella the many challenges facing us in the delivery of low vision care. No one problem stands out as the greatest challenge except perhaps the challenge of ignorance; ignorance in our understanding of the essence of low vision.

For example:

- . what is low vision?
- . how is it defined?
- . who has it?
- . what causes it?
- . what can be done to treat or even prevent it?
- . what are its effects in educational, vocational, social and economic terms, as well as its personal consequences?
- . finally, what techniques are effective in rehabilitating these people unfortunate enough to have low vision?

In this overview I wish to define low vision for you and divide the technical challenge into three: into *medical* challenges, *rehabilitation* challenges and *economic* challenges. Over the next two and a half days these challenges and their subdivisions will be addressed. Many will be discussed in detail in lectures and workshops and some I am sure will be met successfully. I would

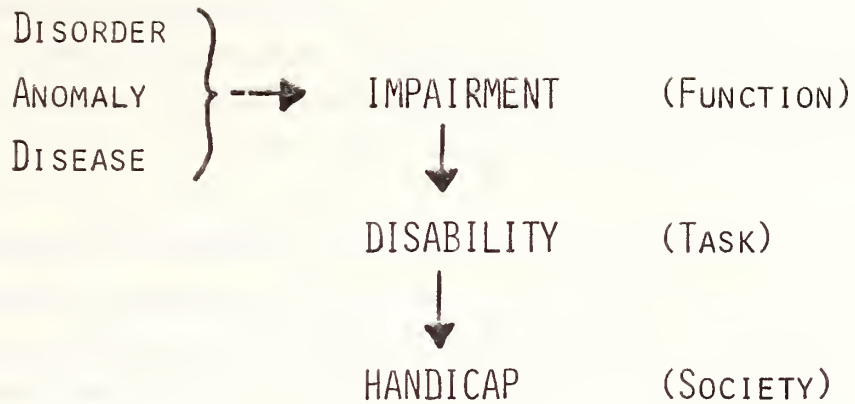
like you to consider my remarks as hors-d'oeuvres before the more substantial and satisfying gourmet delights still to come.

I think most of you will be familiar with the scheme now commonly used by workers in many areas of rehabilitation and shown in Figure 1. (p.28). It suggests that disorder, impairment, disability and handicap are not synonyms, but represent different dimensions of the problem of rehabilitation.

The *medical challenge of low vision* relates to the prevention and treatment of those *diseases, injuries or anomalies* which cause a *disorder* of vision. More is to be said about the prevention and treatment of low vision but we note that the medical challenges extend from the level of the individual to that of the population as a whole.

The application of new technology to individual patients will delay or prevent the occurrence of some of the crippling visual disorders we know today. To give you but two examples, we read that more precise biochemical management of diabetes is known to reduce the incidence of retinopathy and treatment by laser of photocoagulation can prevent the progression of low vision to blindness (Hamilton, 1978). Another example is retinitis pigmentosa which is an adult-onset, degenerative condition of specific genetic inheritance. We understand that medical management of this condition is presently restricted to genetic counselling, particularly of couples at risk of bearing affected children. Its future incidence will be reduced in two ways (Jay, 1978): by the identification of certain genetic markers, thus improving the identification of the at risk foetus and by the demonstration and treatment of enzyme abnormalities which may lead to this disorder.

We know that medical challenges also extend to the public health and epidemiological level. We have seen eye safety programmes very successful in preventing trauma and loss of vision in industry. The vaccination programme for Australian schoolgirls against rubella is one example of a simple and cost effective programme to reduce the crippling effects of maternal rubella on the developing eye of the foetus. Australian ophthalmologists have



The dimensions of rehabilitation. Note that impairment of function is the result of an (eye) disorder, anomaly or disease. It is to be distinguished both from the concept of disability, which is related to a particular task, and from the concept of handicap, which is assessed with respect to the expectation of the society in which the impaired and disabled person lives.

Figure 1.

combined with Government to combat trachoma in the Australian aborigine. Here is another example where a devastating eye disease is amenable to control by simple hygiene and public health methods.

In some other countries, the problems of xerophthalmia or "malnutrition blindness" and onchocerciasis or "river blindness" are the leading causes of severe visual impairment and blindness. These medical challenges are challenges to government to support research and eradication programmes at a level beyond the reach of individual workers or agencies (Jay, 1978).

If medical challenges relate to the management of disorders of vision, then *rehabilitation* challenges encompass the assessment of impairment, disability and handicap resulting from these disorders, as well as the organization of effective programmes of remediation.

We can define low vision as the middle range of a continuum of impairment of visual function from normal to total blindness. Its functional definition has been the subject of study and recent report by the American Academy of Ophthalmology and Otolaryngology (Spivey & Colenbrander, 1976) and will be discussed in more detail by Dr. Colenbrander. Our summary of the draft definition is given in Table 1. (p.36) and demonstrates the three main groups and seven subdivisions chosen to typify visual performance. Genensky (1978) demonstrated that not all patients stay in one group. Using data from the Model Reporting Area (Kahn & Moorehead, 1973), Genensky showed that all partially sighted people who were "legally blind" were not at equal risk of becoming functionally blind, despite their progression from normal to low vision groups. Some people became functionally (totally?) blind without progressing slowly through the continuum, while others in the low vision or blindness groups sometimes returned to the near normal or non-legally blind populations as a result of medical treatment. One of our challenges is that of identifying those impairments likely to show progression and tailoring our programmes of rehabilitation to suit these visual prognoses.



Visual impairment is scaled in terms of visual acuity and visual field restriction, as Table 1 demonstrates. However, these scales classify the hemianopic patient whose 50% loss of visual field is functionally crippling, as having only "slight" impairment (= near normal) and whose visual acuity may remain "normal". Impairment is not scaled in terms of reading fluency, and in this society the loss of reading function is one of the most devastating losses to confront a patient. Impairment is not scaled in terms of contrast threshold, or the detection of large objects of low luminance contrast against their backgrounds. Preliminary results of research supported by the Association for the Blind and the National Health and Medical Research Council (Cunningham & Johnston, 1980) indicate that the detection of low contrast objects (steps, pavement texture) is the critical visual task of pedestrian mobility. We pay only lip-service to the evaluation of the patient with multiple morbidity. The stroke patient is again a good example. Despite a "normal" visual acuity and "slight" visual field impairment, his combined impairments of lower motor dysfunction with loss of reading skills, or sometimes expressive dysphasia, can be devastating for the patient as well as presenting a formidable challenge to rehabilitation workers.

Visual disability is assessed on the same continuum as impairment and is conceded to bear a predictable relationship to impairment but with respect to specific tasks other than visual acuity or visual field. However, not all patients need to be "blind" to have a disabling visual impairment. Patients who operate at the threshold of resolution in acuity terms, for example, watchmakers and hobbyists, may be absolutely disabled by even small impairments in visual acuity but not at all disabled in their tasks of orientation and mobility, which demand a panorama of visual field and relatively normal contrast detection.

Visual handicap is scaled in terms of the social consequences of disability. A significant rehabilitation challenge is that of understanding the handicap of being unable to recognize faces, to do one's shopping, to maintain an acceptable standard of personal hygiene, or to live with dignity an independent existence in one's own home. These social consequences of disability can be lessened

by a person's surrender of lifestyle values long held to be his inalienable right. The personal sacrifices of such adjustments must be made clear to every worker in the clinical and rehabilitation areas.

Finally, the social welfare definition for "blindness" is demonstrated in Table 1. This is a statutory definition based on a fixed level of visual acuity supposed to represent an 85% level of impairment. An argument could be evidenced for a "need" related definition, thus enabling the poor or the multiply-impaired greater access to social welfare benefits, although such a definition would not be readily acceptable to bureaucracy.

Note that "low vision" cannot be defined essentially in terms of its diagnosis or aetiology, because it depends as well on the patient's age at onset, its rate of progression and the compliance with and success of treatment. All age groups may be affected and for the pre-school and primary school child it has important educational consequences. Vocational and socio-economic consequences become more important in adulthood. Low vision and blindness are often poverty related in the elderly, because of a lack of access to adequate care, a reduction in mobility and a loss of opportunity to communicate effectively sometimes shown by the elderly. In this age group, visual impairment breeds alienation, humiliation and often despair (Greenland, 1976). Our obligation is to recognize and meet these needs of our elderly patients.

If these definitions of low vision and blindness are acceptable, a special challenge is presented to the low vision team. Adequate counselling skills and a knowledge of each other's area of expertise must be demonstrated by every team member if a comprehensive assessment of diagnosis, impairment, disability and handicap is to be made. In this area the challenge is to the agency administrators to ensure that highly competent staff in their specific disciplines maintain an awareness of the roles of their colleagues and liaise with them in the total management of patient care.



There are some optometric challenges which fall into the rehabilitation category. I have mentioned new techniques in the assessment of visual performance and suggested that better correlation between clinical measures of visual function and the real world demonstration of visual skills may derive from some of our current experimental work. However, for many patients we prescribe low vision aids - both optical and non-optical - appropriate to the level of disability and handicap. The development of these aids is a continuing challenge. The optical industry has responded in part with the production of new aids making use of the greater design freedoms offered by new ophthalmic materials such as CR39, a lens material from which complex optical surfaces can be moulded at minimum costs after initial tooling. The technical challenge is now to optimize lens design parameters for the provision of low vision aids which combine magnification with distortion-free field of view.

When that great man of vision, Sir John Wilson, founder of the Royal Commonwealth Society for the Blind and President of the International Agency for the Prevention of Blindness, visited the Kooyong Low Vision Clinic two years ago, we showed him a x15 hand lupe we modified by adding a miniature illumination system. Although impressed, he demonstrated his perception of the global problem of blindness rehabilitation by posing us the economic challenge: " .... can you make it for less than a dollar?" I regret that we could not, but it is a fact that complex optical systems are more easily and cheaply made now than in the past.

Ergonomic challenges to the optometrist are common to occupational therapists and orientation and mobility instructors. All aids prescribed and all advice given must be eminently usable. For many patients, painstaking instruction in the use of aids, retraining of old skills and teaching the new is essential if rehabilitation is to be a success. Agency administrators often fail to see the benefits of aids training programmes hidden behind the high staff costs of providing them, because of inadequate or even non-existent service evaluation programmes.

One example of interdisciplinary liaison in our clinic is the regular staff meetings, where the management of patient problems is reviewed, new aids are discussed and patient feedback is used to evaluate the quality and adequacy of the service we offer. In-service training for new staff is essential to ensure that a comprehensive approach to patient care is taken. The "aids" deliverers - optometrists, occupational therapists and orientation and mobility instructors - must dovetail their programmes of care if successful rehabilitation is to occur.

Finally, there are some *economic* challenges to agencies and practitioners. An ongoing evaluation of low vision care must be made at both the patient and the clinic level to guarantee a cost effective and relevant delivery of service. This assumes, of course, that our goals and objectives have been considered carefully and are realistic, given the limits of our resources both in people and money.

As a major and innovative provider of low vision care we must establish the requirements of special patient groups such as the aged, pre-school and primary school children and tailor our programme of care and support with those offered by community workers such as physicians, district nurses, teachers and vocational counsellors.

We must make an effort to contain the costs of our mode of care delivery, especially when only limited success in reaching our objectives may be realized. I am pleased to say that the Association for the Blind has met these challenges by considering alternative venues for patient care within this community, but under the auspices of a health care delivery system which ensures a coordinated approach to low vision care and avoids unnecessary duplication of services.

Research into the evaluation of new aids, new methods of care delivery and the success of existing methods in meeting our objectives is also essential. Most of the research carried out in the low vision clinic at this centre has been supported by university or National Health and Medical Research Council funds through the

collaborating university departments who provide some of the professional staff. Agency support, both moral and financial, has also been forthcoming and in no small way contributes to the endeavour for excellence in the delivery of care manifested by all members of the low vision team.

Unfortunately, the economics of research are often incompletely understood. Programmes of evaluation cost money and they too should be effective in addressing the relevant issues and testing the alternative hypotheses in the solution of the many contentious issues still before us. Nonetheless, I believe that research is the essential element in the continuing development of the quality of service.

I would like to conclude by saying that we all face a personal challenge - a challenge of duty of care for our patients, our relatives, our friends, our clients, or whoever has low vision. Your attendance as delegates at this conference suggests your willingness to meet this personal challenge. I wish you success in your endeavour and welcome you to "Low Vision Ahead".

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CLASSIFICATION OF VISUAL PERFORMANCE												
(NEAR-) NORMAL				LOW VISION				BLINDNESS				
Normal		Near-normal		Moderate		Severe		Moderate		Severe		Total
ASSESSMENT OF VISUAL IMPAIRMENT												
VISUAL ACUITY IMPAIRMENT:												
none		slight		moderate		severe		profound		near-total		total
20/12 20/25		20/30 20/60		20/80 20/160		20/200 20/400		20/500 20/1000		HM, LP		NLP
6/3.5 6/7.5		6/9 6/18		6/24 6/48		6/60 6/120		6/150 6/300				
logMAR						3/60		3/75 3/150				
-0.2 0.1		0.2 0.5		0.6 0.9		1.0 1.3		1.4 1.7		1.8		
VISUAL FIELD IMPAIRMENT:												
none		slight		moderate		severe		profound		near-total		total
180° 160° 140°		120° 100° 80°		60° 40° 30°		20° 15°		10°		5°		0°
ASSESSMENT OF VISUAL DISABILITY												
(NEAR-) NORMAL			LOW VISION			BLINDNESS						
Normal		Near-normal	Moderate		Severe	Moderate		Severe	Total			
can perform all visual tasks			needs aids for detailed visual tasks			needs aids/other senses for gross visual tasks						
			near-normal with aids	subnormal with aids		aids as adjunct	vision as adjunct	no vision				
ASSESSMENT OF HANDICAP												
(NEAR-) NORMAL			LOW VISION			BLINDNESS						
Normal		Near-normal	Moderate		Severe	Moderate		Severe	Total			
can meet societal expectations visually						cannot meet societal expectations visually						
meets all			meets most		meets many	fails many		fails most	fails all			
ALTERNATIVE DEFINITION OF BLINDNESS:												
NORMAL		NEAR-NORMAL		LOW VISION		PROFOUND		NEAR-BLIND		BLIND		
				Moderate Severe								
PROPOSED DEFINITION:												
(NEAR-) NORMAL			LOW VISION			BLINDNESS						
Normal		Near-normal	Moderate		Severe	Moderate		Severe	Total			
REJECTED DEFINITION:												
"legally seeing"						"legally blind"						

Table 1.



## THE ELEMENTS OF COMPREHENSIVE SERVICE DELIVERY

August Colenbrander

## How Blind is Blind?

We have discussed the challenges of low vision; now we will speak about comprehensive service delivery. Before we do so, it is appropriate to look at what we deliver services for. I therefore would like to begin by taking a step back and looking at this whole field from a conceptual point of view.

We talk about the "blindness" system, but it is increasingly recognized that that is not what we should be talking about at this conference on low "vision".

One problem is the definition of blindness - how blind is blind? We can ask the World Health Organization (WHO). In a WHO survey of 1966 it was found that sixty-five different countries used sixty-five different definitions of blindness. That doesn't help us any. Jahoda has stated that "More people are blinded by definition than by any other cause."

BLINDNESS IS ....		
20/200 OR LESS	IN	18 COUNTRIES
LESS THAN 20/200		7 COUNTRIES
3/60 OR LESS		10 COUNTRIES
LESS THAN 3/60		6 COUNTRIES
1/60 OR LESS		6 COUNTRIES
LESS THAN 1/60		6 COUNTRIES
WHO REPORT 1966		

Figure 1.

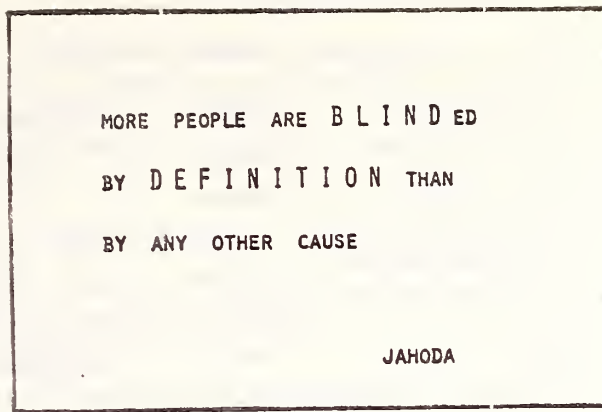


Figure 2.

Since the time of the above survey the World Health Organization, in cooperation with the International Council of Ophthalmology, has introduced the term *low vision* in addition to the term *blindness*. The International Classification of Diseases now recognizes three levels - "normal vision", "low vision" and "blindness". Various other terms might have been used for that middle level. I like the term *low vision* because the word "vision" clearly identifies it as being different from blindness. The word "low" also identifies it as being different from normal vision.

The recognition of at least three levels thus replaces the old dichotomy between those who are "legally seeing" and those who are "legally blind". This simplistic dichotomy often was a source of misunderstanding. If you are legally blind, why do you bother to see at all? Three is the smallest number of categories that can show that there is, indeed, a continuum. For more detailed statistics, as Dr. Johnston already mentioned, we can go to seven categories ranging from *normal* and *near-normal* vision, over *moderate*, *severe* and *profound* low vision to *near-total* and *total* blindness.

LEGALLY SEEING	NORMAL VISION	NORMAL NEAR-NORMAL
	LOW VISION	MODERATE SEVERE PROFOUND
LEGALLY BLIND	BLINDNESS	NEAR-BLIND BLIND

Figure 3.

VISUAL IMPAIRMENT		
SERVICES AVAILABLE:	NONE SLIGHT	DEFINITIONS OF BLINDNESS:
EDUCATION →	MODERATE	
TAX BENEFITS →	SEVERE ←	"LEGAL" (USA)
SOCIAL SERVICES	PROFOUND ←	W.H.O, EUROPE
REHABILITATION	NEAR-TOTAL ←	DEVEL. COUNTRIES
	TOTAL ←	DICTIONARY

Figure 4.

When we go to the dictionary, we find that "blindness" is *total* loss of sight. That is the lowest category. In the United States "legal blindness" is defined to correspond to *severe* visual impairment in the WHO classification. Many European countries and WHO itself use a more restrictive definition of "blindness" at the *profound* impairment level and many developing countries are not even as generous as that; they restrict "blindness" to the *near-total* impairment level.

At different levels, different services become available. In the United States, educational assistance generally is made available at the moderate impairment level, but tax benefits, social services and rehabilitation often do not become available until the severe impairment level is reached,

VISUAL DISORDER	VISUAL IMPAIRMENT	VISUAL DISABILITY..	VISUAL HANDICAP

Figure 5.

Low vision and blindness indicate degrees of visual loss. Other terms we use are *visual impairment*, *visual disorder*, *visual handicap*, *visual disability*. Very often these are used as synonyms. They are not really synonyms; they are different ways of looking at the problem, different perspectives. Therefore, while we arranged the different degrees of visual impairment on a vertical scale, we will arrange these perspectives on a horizontal panorama from disorder to impairment to disability to handicap. We will discuss each of them in sequence.

### Visual Disorders

What do we mean when we speak about a visual disorder? Under this heading we discuss the pathology of the visual system. That pathology can involve many different anatomic components of the visual system: the optical media, the retina, the optic nerve, the brain. As examples, I have listed three very common disorders with which most of you are familiar: cataract, a clouding of the lens; glaucoma, increased pressure inside the eye causing gradual visual loss; macular degeneration, a deterioration of the area of sharp vision in the centre of the retina.

V I S U A L   D I S O R D E R	
DESCRIBES:	PATHOLOGIC COMPONENTS OF THE VISUAL SYSTEM
SUCH AS :	MEDIA
	REFRACTION
	RETINA
	OPTIC NERVE
	BRAIN

Figure 6.

V I S U A L   D I S O R D E R S	
CATARACT	CLOUDING OF LENS
GLAUCOMA	PRESSURE, NERVE DAMAGE
MACULAR DEGENERATION	DETERIORATION OF RETINA

Figure 7.

However, these descriptions of what is anatomically wrong do not yet tell us how the eye can function. We must widen our view from the components of the eye to the visual system as a whole and to how it functions. From visual disorder, where we look at pathology and anatomical sub-divisions, we have to move on to visual impairment.

#### Visual Impairment

When we speak about impairment, we speak about organ function. We must describe impairment in terms of various visual functions rather than in terms denoting anatomical structure. Functions which may be impaired include *visual acuity*, *visual field*, *binocular vision*, *colour vision*, *night vision*, and you could name others.

V I S U A L   I M P A I R M E N T	
DESCRIBES:	REDUCED FUNCTION OF ORGAN
SUCH AS :	VISUAL ACUITY
	VISUAL FIELD
	BINOCULAR VISION - MOTILITY
	COLOR VISION
	NIGHT VISION

Figure 8.



V I S U A L   I M P A I R M E N T	
CATARACT	UNIFORMLY BLURRED VISION
GLAUCOMA	PERIPHERAL FIELD LOSS TUNNEL VISION
MACULAR DEGENERATION	VISUAL ACUITY LOSS CENTRAL SCOTOMA

Figure 9.

Most visual disorders cause characteristic visual impairments. A cataract, for instance, will cause a diffuse loss of vision and often cause a glare problem. Patients with a macular degeneration, on the other hand, face a different problem. They lose the use of the centre of vision but will maintain peripheral vision. Patients with advanced glaucoma experience the opposite problem. They will lose peripheral vision while the centre may be maintained. This is what is called "tunnel vision".

In classifying various degrees of visual impairment, we can use the seven categories discussed earlier. We can classify visual impairment from *none* to *slight* to *moderate*, *severe*, *profound*, *near-total* and *total* impairment.

The following table has been designed to include those criteria that were found to be most common in the WHO study mentioned earlier. You will recognize that the category of severe visual impairment corresponds to what is known as "legal blindness" in the United States and several other countries: visual acuity of 0.1 (or 6/60 or 20/200) or less, or a visual field diameter of 20 degrees or less.

See Figure 10, next page.

VISUAL IMPAIRMENT		
	VISUAL ACUITY	VISUAL FIELD (DIAMETER)
MODERATE	20/70 OR LESS	60° OR LESS
SEVERE	20/200 OR LESS	20° OR LESS
PROFOUND	CF 8' OR LESS	10° OR LESS
NEAR-TOTAL	CF 3' OR LESS	5° OR LESS
TOTAL	N.L.P.	N.L.P.

Figure 10.

## Visual Disability

How the organ functions, however, still does not tell us how the person functions. To answer, we have to widen our perspective again, this time from the organ to the person. When a person has lost certain abilities, we say that person has a dis-ability.

VISUAL DISABILITY
<p>DESCRIBES: REDUCED ABILITIES OF INDIVIDUAL</p> <p>SUCH AS : READING SKILLS</p> <p>MOBILITY SKILLS - ORIENTATION</p> <p>DAILY LIVING SKILLS</p> <p>VOCATIONAL SKILLS</p>

Figure 11.

Figure 12.

VISUAL DISABILITY		
	DETAIL VISION	GROSS VISION
LOW VISION		
MODERATE	NORMAL WITH AIDS	
SEVERE	SLOW WITH AIDS	USEFUL
PROFOUND	MARGINAL	HELPFUL
NEAR-BLIND		UNRELIABLE
BLIND		

Visual dis-ability is not measured in terms of organ function, but in terms of an individual's skills. In considering visual skills, we must consider two main groups of tasks: detailed tasks, such as reading, requiring central vision and gross tasks, such as mobility, requiring side vision and visual field.

For disability, also, we can discern various levels or degrees of *disability*. At the *moderate* level performance can be normal with appropriate aids; at the *severe* level one can perform detailed tasks but performance will be slow, even with aids; at the *profound* level detail vision becomes marginal. Gross vision is a little less demanding. At the *severe* level, gross vision can still be very useful; at the *profound* level it is helpful under certain circumstances, with good illumination, etc. At the *near-blindness* level it becomes unreliable.

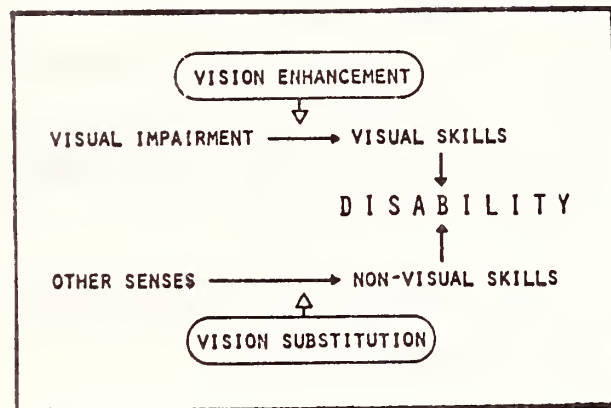


Figure 13.

Speaking about disability, we have to consider more than just visual skills and visual impairment alone. Figure 13 demonstrates that visual impairment can reduce visual skills, but there also are the non-visual skills provided through the other senses. We must always consider visual and non-visual skills in their relation to each other. The combination of those two provides the abilities or dis-abilities of the individual. We touched on this in an earlier discussion this morning, when the patient with other disabilities, mental deficiencies, hearing loss, or physical impairments was mentioned.

Figure 13 also indicates that there are two ways in which we can enhance the abilities of the individual. We can work on *vision enhancement*, that is, on the optimal utilization of whatever vision is available, or we can work on *vision substitution*, that is, on optimal compensation through use of the non-visual skills.

Speaking about vision enhancement, we recognize two groups: *optical aids* and *accessory aids*. Optical aids are most important; they include glasses, telescopes, magnifiers. But the prescription of such aids is only a small part of comprehensive low vision care. Accessory aids are those aids that do not use optics. They include use of good illumination, good contrast, adapted or enlarged appliances and large print. Large print cheques, for instance, used with a felt-tip pen, allow low vision patients to read their own cheques, a small but very important aspect of independent living.

To substitute or supplement vision we can often use the sense of *touch* or *hearing*. Examples are a large telephone dial or a thermostat knob with raised dots. (In our area the gas and electric company will come out and install raised dots on thermostat dials so that patients can set their oven by touch rather than by vision).

Hearing offers another form of vision substitution. I think of radio, television and talking books.

Often, it is not even necessary to use devices or appliances. Many *daily living skills* just require the use of special techniques or of different ways of doing things. For instance, milk is most visible in a dark cup, but coffee is more visible in a light-coloured cup. A glass of milk is more easily visible against a dark background than against a light background. One can discern coins by feeling the edges and one can distinguish different denominations of bills by folding them in different ways.

*Orientation and mobility* skills represent another important area where a little instruction may go a long way towards improving a person's independence.

In mobility, as well as in daily living skills, the attitudes of family and friends are an important factor. Sighted guide technique is one example of how a sighted person can help, but excessive protectiveness can also smother the initiative of the visually impaired person.

VISUAL DISORDER	VISUAL IMPAIRMENT	VISUAL DISABILITY	VISUAL HANDICAP
PATHOLOGY	ORGAN FUNCTION	VISUAL SKILLS	
MEDIA	ACUITY	READING	
RETINA	FIELD	MOBILITY	
BRAIN		LIVING	

Figure 14.

Figure 15.

V I S U A L   D I S A B I L I T Y	
CATARACT	GLARE   PROBLEM
GLAUCOMA	MOBILITY   PROBLEM
MACULAR DEGENERATION	READING   PROBLEM

Thus, we can now complete the third column of our panorama. Again, we notice that there is a relation between impairment and disability, but that various impairments are disabling in different ways.

Visual Handicap

We already mentioned that others can have a significant influence on how an individual with a visual impairment functions. For a full assessment of the performance of any individual we must, again, widen our perspective. It is not enough to consider an individual and his or her abilities in isolation. We must consider these abilities in



the context of the social and physical environment. When we do this, we consider the *handicap* caused by the disability. For instance, loss of the ability to read newsprint is a far greater handicap in some professions than others.

We have seen that the disabling impact of an impairment can be reduced, not only by reducing the impairment, but also by providing compensatory mechanisms. Similarly, a person's handicap can be reduced, not only by increasing that person's abilities, but also by changing the demands and expectations from the human and physical environment. An example in a different area: a person in a wheelchair living in a home with many steps and stairs has a very severe handicap. However, by moving him to a bungalow where everything is level, one can reduce the handicap without changing anything in the abilities of that individual.

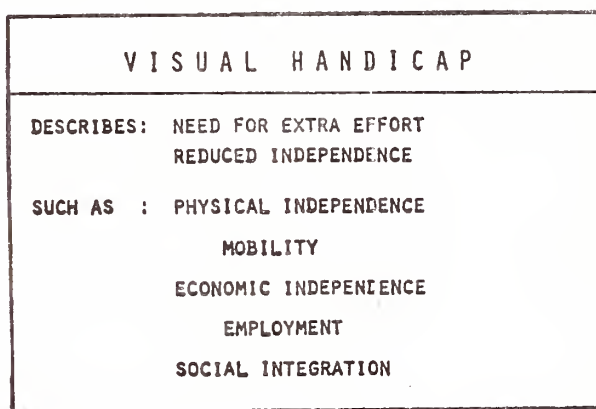


Figure 16.

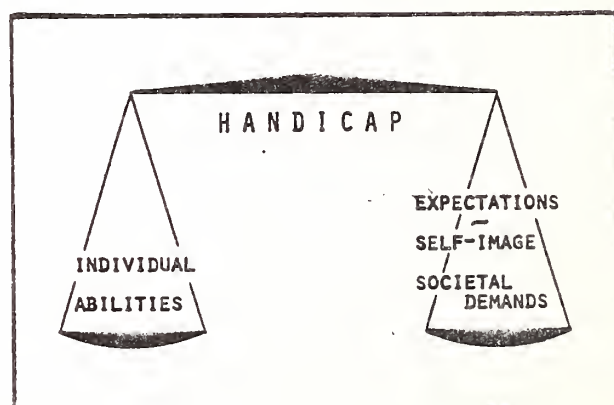


Figure 17.

One of the most important aspects of handicap for many people is the lack of independence. Physical independence, mobility, economic independence (employment) and social integration are among the major parameters by which the handicap aspect can be assessed. Handicap is the balance between individual abilities and the societal demands.

We now can fill out the last column in our scheme.

VISUAL DISORDER	VISUAL IMPAIRMENT	VISUAL DISABILITY	VISUAL HANDICAP
PATHOLOGY	ORGAN FUNCTION	VISUAL SKILLS	EFFORT DEPENDENCE
MEDIA	ACUITY	READING	PHYSICAL
RETINA	FIELD	MOBILITY	ECONOMIC
BRAIN		LIVING	SOCIAL

Figure 18.

#### Comprehensive Services

Why have I spent so much time on the discussion of these concepts? Because I believe that this perspective also gives us important clues about what is needed for comprehensive service delivery and which professionals should be involved in the care of the low vision patient or the low vision client. Various activities affect different aspects of what we have discussed. *Medical and surgical care* can affect the visual disorder and the visual impairment, but the ophthalmologist, by and large, is hardly trained to deal with the other aspects of the visual disability and of the visual handicap. *Visual aids* cannot change the visual disorder but they can affect the visual impairment and the disability aspects. *Education* has to take the disorder and the impairment as given, but can do much to reduce the disability and to reduce the handicap. This is the domain of those working in vocational counselling, training, rehabilitation, etc.

See Figure 19, next page.

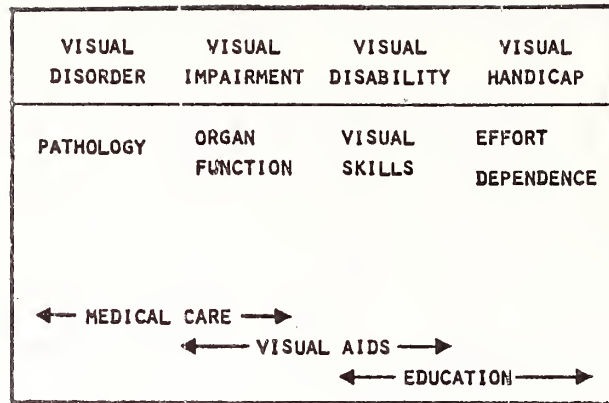


Figure 19.

Thus, we see a complete spectrum of overlapping services, all of which are needed to help the individual effectively. From this perspective, it should become abundantly clear that no single service provider can be expected to provide this entire spectrum. It is clear also that there is very significant overlap and that no worker can work in isolation.

The ophthalmologist comes in as the first link in this chain. Sometimes he can affect dramatic improvement through medical and surgical means. But when surgery can no longer help, he should recognize that there remain other things to be done.

The next link is provision of aids. This is the domain that ophthalmology and optometry share.

Education with visual aids is where the low vision technician comes in. Other educational aspects are dealt with by the educator for the visually handicapped, the rehabilitation counsellor, etc. They need to understand the aspects of visual disorder and visual impairment. They need the skills to read an eye report from the ophthalmologist because unless one has a good understanding of the underlying disorder, its nature and prognosis, and whether anything else medically or surgically could or should still be done, one cannot provide adequate rehabilitation. The ophthalmologist, on the other hand, needs the skills to write an eye report in such a way that it is not only intelligible for a fellow ophthalmologist, but also for the workers at the other end of the spectrum. Too often there seems to

be a big gap in communication between the workers at each end of the spectrum. One of the big advantages of a conference like this is that it brings all these professions together in the same room so that we can begin to realize that the only way we can provide adequate services is by working together.

#### A New Profession?

The question has been raised: Do we need a new specialty of low vision specialists? I believe we need certificates of special competence in low vision for a variety of established professions. We need ophthalmologists with special competence in low vision; we need optometrists and orthoptists with special competence; we need ophthalmic assistants and technicians with special competence, etc. Educators for the visually handicapped who, for too long, have concentrated on education of the blind, need additional competence in low vision. Vocational rehabilitation counsellors, likewise, need special competence in low vision.

I strongly believe that it would be a mistake to establish a new and separate specialty. There are several reasons. One is that I do not believe there are enough employment opportunities for people who would make this their full-time employment. Yes, they could be employed in a setting like this centre, but there are very few such comprehensive centres in the world. They would not be employable in the average ophthalmologist's office or in an agency in a smaller town. A second, more fundamental, reason is that I do not believe any one individual can span this entire spectrum of services. A third reason is that once a new profession has been instituted, one of the goals of that profession will become self-perpetuation, often through rules and regulations that insure that only they can provide the services, etc. That would not help our clients.

In summary, I do believe that low vision should become a recognized area of special competence. I do not believe that it should become an isolated new profession.

We started out with the question: "How blind is blind?" I hope I have made it clear that the answer depends largely upon one's perspective. If we look at vision rehabilitation in this comprehensive way, we no longer need to dismiss our patients with a statement, "I'm sorry, there is nothing more that can be done", meaning, "there is nothing more that can be done about your disorder", because we will realize that there still is a lot that can be done about the handicap and about the whole person. That's where the work of each of us comes in. I hope that this conference will help us all to become better equipped to reduce the "blindness" of our clients.

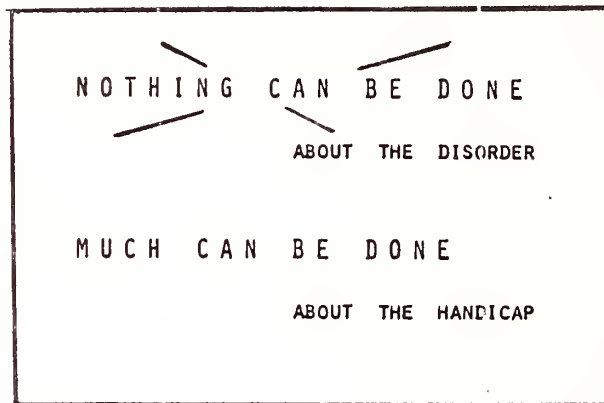


Figure 20.



## LOW VISION NEEDS IN SOUTH EAST ASIA

Babu Rajendran

One thousand years before Christ, the great Indian surgeon Sushruta demonstrated for the first time in the world the surgical cure of cataract.

The first Eye Hospital in the world was the Moorfields Hospital in London established in 1818. In 1819, Madras established the second Eye Hospital in the world. If I were to use a golfing expression, in spite of this "great handicap" the problem of the blind and visually disabled seems to have reached enormous proportions in India.

One fifth of the blind people in the world are in India. In a total population of 640 million people, 9 million are blind, of whom 5-6 million are curably blind due to causes like:

- . cataract;
- . corneal blindness;
- . retinopathies;
- . glaucoma and degenerative diseases.

The magnitude of the problem is further exemplified when one realizes that blindness in India costs the nation about \$5,000 million in capital wastage and another \$5,000 million in loss of production. A few years ago the problem seemed beyond control and it looked as if nothing could ever be done. However, as a result of the combined effort of the Government of India, the various State Governments, international and national agencies, the action taken so far seems rather impressive.

At the moment half a million cataracts are treated in India each year, though it has been estimated that double this number are required to be treated to achieve proper control of blindness caused by senile cataracts. With India achieving zero status in smallpox in June, 1975, about 3% of blindness due to this has been eliminated. So also a 5% reduction due to control of trachoma and a 2% reduction due to improvement of nutritional status has been achieved. Currently, ophthalmic care is carried to rural areas, and literally to the very door step of the patient, by mobile eye units. The national plan recently put into action envisages physical targets like:

- . one ophthalmic bed for every 15,000-20,000 people as against the present one for every 50,000;
- . one eye specialist for every 30,000 people as against one for every 170,000 at present.

I beg your forgiveness for having considered the problems of blindness in India when I am supposed to talk about low vision needs in my Region. I honestly feel that one cannot appreciate the low vision requirements in a country like India unless taken in the correct perspective of what the ophthalmologist and optometrist in India is faced with in his day to day work.

My interest in low vision stems from the two year period I spent with Professor Crock at the Melbourne University Department of Ophthalmology. As part of my training with him I was deputed to work at the Kooyong Low Vision Clinic and it introduced me to a new dimension in patient care. I also learnt from Professor Crock that there was more to patient management than giving high sounding academic names to disease entities.

The benefits that patients derive from low vision aids has convinced me that we in India should be able to give the benefits of such technology to our patients as well. But, in light of the preceeding few minutes I have spent discussing the problems of tackling 9 million blind people, you can judge for yourself the staggering requirement for the visually impaired in India who

account for about 45 million people, or nearly three times the total population of this country.

Fortunately for us, this does not mean that 45 million people require low vision aids. The requirement has to be considered with three main factors in mind:

- socio-economic status;
- financial strain;
- visual requirements.

Eighty per cent of Indians live in rural areas. Their rate of literacy, reading habits and visual requirements may not be as stringent as their Western counterparts or urban countrymen. I do not envisage the need to carry low vision technology to the villager. A few stray cases perhaps who are desirous of the benefit of low vision aids could obtain such benefit from urban-oriented clinics.

While the technological developments in low vision have been able to provide various forms of magnifiers and telescopes, it is rather difficult to predict at this juncture the acceptance rate of such aids by the Indian patient. This I say mainly because not much work has been done in this area before and the average Indian is unaware of such aids and benefits. In addition, it must be stressed that the Indian market does not offer many low vision aids for sale except rather simple magnifying lenses.

I do not intend to be pessimistic in my approach to the low vision needs of South East Asia in general and to India in particular.

On the other hand, I am very optimistic that if low vision clinics were established in India, there would be more than enough work. A great deal would be achieved with simple low vision aids which conform to socio-economic standards as well as not being a great financial strain to the patient.

Towards this end, I envisage the starting of at least three or four low vision clinics in major cities in India. Currently, South India cannot boast of even one functioning clinic.

In my work in retinal clinics in India in the past two years, I have seen enough clinical material requiring low vision aids to justify the organization of a low vision clinic in South India. I sincerely hope that when such a clinic is established it will not only serve the patient and act as a referral centre to many ophthalmic clinics and hospitals much like the Kooyong Clinic here, but will also be able to conduct at least annual courses in the science of low vision for the benefit of interested ophthalmologists and optometrists. If the movement can be got off the ground, I am sure that soon enough many centres will pick it up and develop themselves. In this regard I am making an analogy to the mobility training programme conducted for the past couple of years in India by Don Westaway and his group, as a result of which these skills have been carried to the far corners of the country by the students of his course. This is the kind of programme that India requires in the low vision field:

- . to educate the ophthalmologist/optometrist;
- . to educate the public.

Ophthalmologists and optometrists may need short and intensive courses in case selection and in examination and management of low vision cases. The public needs to be made aware of the availability of these facilities.

Initially the patients may have to import low vision aids on prescription from the clinics, but as time passes and the trend is set up, I am sure the market will provide either indigenous or imported aids.

In the other regions of South East Asia I feel the need for low vision services should be much the same, except for variations in number and probably easier access to aids that are prescribed.



In trying to analyse a problem like low vision needs in the Indian Continent, I feel that we are now ready for low vision technology and the sooner we start providing such services the better.

When Mother Teresa was awarded the Nobel Prize last year, she accepted it as a recognition of the poor. By inviting me to speak to you this morning, I feel that this conference has recognized that we in the Subcontinent are ready to enter the field of low vision in a big way.

I would like to conclude with a sloka from our Scriptures:

"Sarvendriganam Nayanam Pradhanam", meaning, of all the organs in the body, the eye is the most important. If low vision care can help this organ, then it is time we provided this facility in the Region.

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## LOW VISION NEEDS IN SOUTH EAST ASIA

Keith J. Marshall

Low vision programmes are rapidly becoming an accepted part of special education in various parts of the world, but in many parts of South East Asia there are still many low vision children who receive education which is primarily designed for a child with a total loss of vision and consequently they are taught to use tactile rather than visual methods.

A few months ago, the organizers of this conference, as an expression of their interest and concern in this Region, asked me to prepare a paper outlining the present provisions for educational programmes for low vision children. My first step in preparing this paper was to prepare a questionnaire on low vision services. Here I must express my thanks to Bill Brohier, South East Asian representative of the Christoffel Blindenmission and Mr. Suresh Ahuja of the National Association of the Blind, Bombay, India.

The questionnaire was sent out to over two hundred schools and blind agencies in the South East Asian Region last March. Accompanying this detailed questionnaire was an introductory letter indicating why the information was required and a paper which gave basic outlines of a low vision programme. The latter enclosure was intended for those areas in Asia where even the term "low vision" still has little or no meaning.

Five days before this conference fifty replies had been received and although this is a comparatively low percentage, I feel certain that most of the low vision services presently existing have been represented in this report. It is my intention to follow up this questionnaire and maintain contact with the various areas represented in this report.

There were no replies from Vietnam, Nepal and Bangladesh. I suspect the reason for this is that there are no services in these regions. Although replies were received from Indonesia, Sri Lanka, Pakistan, Bhutan and Thailand, their replies indicate that very little progress is being made. However, I understand from other sources that at the present moment, Helen Keller International is introducing low vision programmes in certain parts of Indonesia.

Limited programmes have been in existence for some years in parts of India, particularly in Bombay, Bandung and Dehra Dun and a school in Bangalor has indicated that they will start a new programme based on the English "Look and Think" Low Vision Programme.

Singapore has had a limited programme for some time and Malaysia is presently involved in the preparation of a low vision programme in the not too distant future.

In the Phillipines, Fiji and Korea, visual screening has been introduced and these countries have expressed a keen interest in developing a low vision service.

In Taiwan, programmes are well developed and appear to cover the needs of students in both residential and integrated educational programmes.

Japan, as we might expect, makes use of highly sophisticated equipment and thus its services are particularly well advanced in technical aspects. In Tokyo alone there are special low vision classes in eighteen different schools. Low vision work is also conducted in Nagoya and Hokkaido.

In Hong Kong, at my own school, a full programme has been in operation for eighteen months and our colleagues in the Canossa School for the Visually Disabled have introduced a limited programme for their students. We have already shared our experiences with teachers and educators from five other Asian countries and will be happy to extend this service in the future.

At the Fifth Asian Conference on Work for the Blind, sponsored by the World Council for the Welfare of the Blind, held in Hong Kong in

December, 1978, the following resolution was passed unanimously:

"This conference recognizes the value of and the need for promoting the development of low vision services at every level, particularly in the education process and recommends:

- that low vision screening and/or ophthalmological evaluation be provided to all children before entering school and periodically throughout their school years;
- that staff training be provided and a curriculum developed for visual therapists and/or low vision teachers;
- that regional sharing and cooperation in technical know-how and in the manufacturing and development of low vision aids be effected by all countries."

That resolution passed nearly eighteen months ago points out very basic requirements for low vision programmes. The result of the survey also gives a clear indication of the needs of Asia as a whole.

I sincerely hope that some time in the near future we can consider providing the following facilities:

- a basic, simplified form of teacher training which will enable teachers from all over Asia to understand the principles of low vision teaching and to utilize and adapt their knowledge to the needs of their own country;
- to have available a reliable supply of aids and equipment designed at low cost, preferably in an area located in the centre of the region, which could also provide:
  - a centralized information unit with up-dated information on all aspects of low vision;
  - training for ophthalmologists, optometrists and visual therapists in low vision techniques.

## REVIEW OF SESSION

Barry Cole

What a terrible task you have given me! How would any of you like to come up here and summarize this morning's session? I expect that what is required of me is some sort of instant video replay, that somehow in fifteen minutes I am to encapsulate all those wonderful things we have heard this morning from what has really been a remarkable series of beautifully presented and informative papers.

Mr. Wilson spoke of the explosion of knowledge and the conquest that we must make of the technological and social challenges in front of us. I am not sure that we should be too worried about that. I know that change and confusion can frustrate development. It can certainly paralyse decision-making. But confusion also provides opportunity for those who do their homework. If others don't know what to do, those who do can often achieve their goals more easily than is possible in a stable, tightly ordered social environment. A change is never easy. We all have our own problems to grapple with in trying to reach the goals we seek and certainly the Association for the Blind has shown that it is one organization that is able to capitalize on our explosion of knowledge to change and to avoid the frustrations of confusion that arises.

Mr. Wilson also spoke on the need for commitment and stressed the need for comprehensive services. I think that this point of Mr. Wilson's was beautifully illustrated by Dr. Colenbrander when he talked about how we should be looking at visual enhancement and also at non-visual skill enhancement. He spoke, as did most people, on whether or not there should be a need for a low vision specialist. Mr. Wilson referred to Sweden, where a specialist in



low vision has developed. On the other hand, Dr. Colenbrander spoke against the need for a low vision specialist particularly because the job opportunities may not be broad enough. He argued that the services that were needed were too broad for one professional to encompass and highlighted the dangers in creating a new profession. I could only agree with that. I think we have a superfluity of professions in the eye care field already.

I think the general feeling that came out of the discussion was that we must use a variety of professions in the delivery of low vision services, each with special competence in the low vision area. The question of the need for a low vision technician could be met by the developing of the schools of orthoptics, occupational therapy or orientation and mobility instruction. This is a point which should possibly be taken up later in the conference when we have the opportunity to discuss in more detail our respective roles. Perhaps we should discuss whether there is a need for a low vision technician to provide domiciliary training services, training services in the use of aids, support services and overall management services or whether, in fact, we could make use of one of our existing professions to fill this particular role.

When you have professions working together, you have the problems of interprofessional cooperation. Teamwork is recognized as being an essential goal in low vision work. But what are the problems that face us in interprofessional cooperation? John Wilson, pushing diagnostically on the sore spots, talked about some of these. We don't really understand each other and our respective roles. We certainly give lip service, as we are today, to the need for interprofessional collaboration. We may even work in the same place side by side, but unless we are very careful, we may then retreat to our offices and consulting rooms and go on doing what we have always been doing under ordinary circumstances, simply meeting to have a cup of coffee. This is not really working together.



Nobody seemed to touch on the problems of teamwork amongst groups of people coming from different professions. Nobody has discussed that difficult question of hierarchical leadership in teamwork, knowing that if we try hierarchical leadership that this will be resented by those not in the leadership role as an intrusion of their professional independence.

An alternative is non-leader cooperation, but this inevitably means a committee and we know that committees design camels instead of horses! We know that committees promote mediocrity through compromise and fail to make decisions. If they do make decisions, they are decisions that one person has made before the meeting has started. We assemble those ten people together, all with enormous salaries and we don't think of the thousands of dollars that are spent at committee meetings. Yet if we don't sit around committee tables, how do we find out about each other, how do we learn to work together?

One model is a changing leadership model which is being used in some community health centres, whereby a leader emerges, depending upon the need of the particular patient or a particular activity. This is something that the conference might discuss later, the question of effectively leading a group of spirited, very independent professionals to work together.

Maybe there is no ideal model. Maybe it should just simply happen. Maybe there is no substitute for simply having good people working together and once you have a group of good people working together these questions of leadership or non-leadership may not arise.

Both Dr. Colenbrander and Dr. Johnston stressed the importance of definitions and the importance of scaling impairment, disability and handicap. These are words which we should note carefully. They are views that have been steadily promoted now for some time yet they still haven't broken through the rigid legal definitions we have at the moment. I don't believe we can spend enough time examining our questions of definition, the careful choice of words, the careful distinguishing between such things as disorders, impairments, disabilities and handicaps. Dr. Colenbrander stressed

that these terms are not synonyms, but form part of a continuous scale. He made the very nice point that handicap is the relationship between abilities and societal demands. I believe that in some countries the definition of blindness in a legal sense is based on this balance between social need and visual impairment. I loved his conclusion that you are as blind as you feel and as others make you feel. That is a message that we should all store away and bear in mind as we work in this area.

It is all very well to use these words and talk about disorder, impairment, disability and handicap and to say that they are a continuous scale, but I have the feeling that we don't know really enough about these scales. We have the Snellen Chart or the Bailey/Lovie Chart, which is perhaps one step better in measuring impairment, but it is a very simplistic measure.

I believe that we need to do more work and more thinking about our assessment scale. This is something that Dr. Johnston mentioned in his paper which he has researched. There will be reports later at this conference about measuring impairment, disability and handicap in a sensible, meaningful way and determining the relationship between these three categories. Our present efforts in defining these terms are still too rigid and simplistic.

Two speakers, the Hon. Michael Mackellar and Dr. Johnston, talked about cost, although I thought it might have been talked about more. We should, when talking about cost, distinguish very carefully between cost containment and cost effectiveness. I am pleased to note that the stress was on the latter. Obviously, the management of patients with low vision and rehabilitation will be more costly than the management of people with more moderate visual impairment that can be brought back to functional normality relatively easily. But then the question is: "What cost?"

What worries me is that we tend to think of our costs in running low vision services in terms of historical costs. If I am short-sighted, it costs me \$20 - \$30 to have my eyes examined and \$50 - \$100 for a pair of glasses. With a low vision person we say that the cost should be more than that, but perhaps not too much

more. Rather than think in terms of cost in historical terms, we should think of cost in terms of a critical analysis of need. Perhaps we should ask how much it will cost to properly assess a person to find out what can be done in terms of restoring, as far as possible, visual function, providing non-visual enhancement of his skills, rehabilitation, etc. We could probably give some idea of the time required and place a cost on it. Then we should analyse the cost of treatments, instead of approaching it on the basis of past spending with the addition of 10% for inflation.

If we were able to substantially enrich a person's life through the rehabilitation services that can be provided in a low vision clinic, what sort of cost is it worth? At the moment, we think in terms of hundreds of dollars. I wonder if we shouldn't think in thousands like we do with the cost of a motor car, or perhaps an overseas trip, or a hi-fi set? Perhaps we need to rethink our attitudes in terms of cost, but analytically and sensibly. Obviously, it is important to achieve value for money and goals that are worthwhile to the patient. But in doing so, let's relate spending to the value that those goals have to the patient.

I was rather surprised that nobody stressed the need for research. This is a very new field. Even in Australia, where perhaps we have moved faster than other countries in this Region, there has been very little research and there is a need for substantial coordinated research programmes. We should investigate the best way of creating and using technological innovation. We need strategic research programmes that relate to our interests.

My own organization, the Melbourne University Department of Optometry, has a very substantial interest in low vision and we have been very much involved in the Kooyong Low Vision Clinic since its inception. Yet, in a research budget in the order of \$1/3 million, only 10% might be spent in the low vision area and that is hardly enough even to implement a coordinated, strategic programme of research, let alone get it moving very quickly. This conference might like to give some thought to the sort of research needed and where and how it should be initiated.



Another thing that seemed to be missing from this morning's session was the need for evaluation of effectiveness. I have already mentioned that we don't want cost containment, but we need to achieve reasonable cost and cost effectiveness and to do this we do need evaluation programmes.

We need to know how much we really help. Sometimes consulting room improvements are not borne out in real life. The assistance given is good perhaps for a while, but in the long term it is not as effective as we think. Jan Kitchin studied this a few years ago. We thought, for example, that we were going to have a tremendous bias on near work. We know we can do something about near work and therefore tend to ignore the other needs of the patient.

To test this, Jan Kitchin and Ian Bailey did an independent analysis of patient needs and then related them back to the ophthalmologist's and optometrist's assessment. The aim was to test whether practitioner bias was having a significant effect on their assessment of patient needs. In that study, I was pleased to note that, in fact, practitioners were not unduly biased, but that patients did have a real need for near work assistance over and above other kinds of assistance.

Towards the end of the morning we heard Dr. Babu Rajendran and Mr. Keith Marshall tell us of the millions of blind and visually impaired people in South East Asia and the relative paucity of low vision rehabilitation services. There are obviously many blind people in South East Asia, many of them curably blind if they had access to ophthalmological care. Many could have residual vision made useful if they had access to optometric care. It is encouraging to hear that a beginning is being made to overcome what is obviously a massive problem. Both speakers give us some hope that some assistance is being given to millions with moderate visual impairment.

Those from South East Asia should not feel too much at a disadvantage. In this country, with its far fewer economic and social problems, only recently have well planned and well coordinated low vision rehabilitation programmes begun. I can still recall only six or so years ago being invited to lunch by John Wilson and Arthur Wilkins of the Association for the Blind to talk about the possibility of establishing a low vision clinic.

Not so long ago, the tendency to regard those with severe visual impairment as being literally blind resulted in the provision of all sorts of services other than visual acuity. I am glad to see that this has changed in Australia, but let's remember that it is only a very recent change. Obviously, South East Asia will need to develop its professional groups as well as try to assemble the services. It is all very well to have space and an organization, but there will also be a need for manpower in the various professions that will be involved.

Australia should be willing to help and it is pleasing to see already a growing cooperation between South East Asia and Australia in the ophthalmic field. I am sure my colleague, Professor Crock could speak on this as well as I can. Tonight I leave for Japan to attend the International Optometric League Conference being held outside Europe for the first time. I think that is tremendously encouraging. In two weeks time, two of my colleagues will go to Hong Kong for an Asian Optometric Conference. A month ago my colleague, Mrs. Jan Kitchin, went to Singapore and Malaysia to give courses on the management of low vision to local ophthalmologists and optometrists and others involved in the care of visually impaired people. Last year my profession was involved in a conference in Bali and Singapore. One of my graduates just last year decided he was going to work in India. These are all very encouraging signs of growing cooperation.

Conferences, however, are rather ephemeral things. We attend dinners and social functions and we meet people, but this is short-lived. I am pleased that this conference has a session "Where do we go from here?" I hope in that last session, amongst other things, you do discuss in concrete terms where we go from here in respect to



relationships between the countries in this Region providing rehabilitation services for visually impaired people.

## REHABILITATION: AN ESSENTIAL COMPONENT OF LOW VISION CARE

Allan N. Freid

The concept has been proposed that *rehabilitation is an essential component of low vision care*. Although this was not true many years ago, the concept is certainly true in regard to modern day low vision care. Also true, and equally important to be understood, is that *low vision care is an essential component of rehabilitation*.

Prior to 1957, *low vision care* meant that the optometrist or ophthalmologist "rehabilitated" the patient with low vision aids. Although vision may have been treated, no other functions or needs were properly addressed.

Concurrently, but independently, those professionals responsible for restoration of daily functioning of the individual worked with little regard to the importance of visual elements of the problem.

The two groups, in not working together, were each operating within somewhat of a vacuum. The vision care practitioner wondered why more patients were not successful. After all, he was able to demonstrate amazing improvements in the patient's visual capabilities. He rationalized that it must be that the aids were ineffective or the patients themselves were unappreciative. Thus, the conclusion followed that "low vision care did not work". Meanwhile, the rehabilitation professional was not completely successful in that many patients who could have functioned as the sighted were taught to function like the totally blind.

1957 was a turning point in the United States with the publication of the Brooklyn Industrial Home for the Blind (IHB) Optical Aids Service Survey. This was a report of 500 cases of the legally blind seen at the Home from 1953 to 1955. Although there were some other agencies operating in a similar manner, they were few in number and the information concerning their successes and the reasons for

those successes were not disseminated throughout the professions or to other agencies.

The IHB report revealed many previously not clearly understood factors important to successful low vision rehabilitation.

The first finding was that 68% of the legally blind, thought to be hopeless, were successful when treated by a team approach and positive attitudes to low vision care. The designation of success was determined by interviews with patients by staff not involved in the optical aids service, some months following the patient's care. The survey indicated that an additional 14% could obtain increased visual capacity, but for one reason or another, refused the use of aids.

The second finding, and perhaps one of the most significant, was that 68.8% of the aids prescribed were from the range of lenses which can be supplied by any general ophthalmic laboratory. This indicated that the important factor in successful low vision care was not the esoteric character of the low vision aids themselves.

The results published by IHB have been duplicated and the percentages increased in ensuing years, both in other agencies and in private practice. In all cases, as in the IHB programme, the keys to success seem to be related to the use of special approaches, special examination techniques and, most important, the interactions among the different professionals making up the rehabilitation team.

In order to further facilitate this discussion, we should settle on an acceptable understanding of what we mean by "rehabilitation" and "low vision care".

According to Blakiston's Medical Dictionary, "rehabilitation" is "the rendering of a physically or mentally handicapped person fit to engage in a remunerative occupation" (Jones et al, 1949). Note that this definition is from 1949. I think most of us today would feel that the definition should be expanded to include "the ability

to engage in daily living activities with as much independence as possible."

The definition of low vision care may be somewhat more controversial. Typically, agencies, mostly public, but some private, prefer to have low vision defined in terms of hard numbers. They prefer the 6/60 (20/200) and 20 degree field limits for legal blindness and 6/21 (20/70) as the lower limit for partially sighted. They continue to promote this model because anyone who can read a report, or better yet a computer, can easily categorize people in terms of eligibility.

Among professionals today there is the feeling that this approach is grossly discriminating to many people and is not in keeping with the best interests of society as a whole, and much less the individually visually impaired. This approach results in large numbers of people not receiving the care they need and thus remaining on the public assistance rolls. We must realize that what is even more unfortunate is that when limits are set by any recognized group, especially a public agency, those limits and their implications have a tendency to be accepted throughout the professions and the community.

Many of us prefer to define low vision on a *functional* basis. In these terms low vision care may be defined as "the application of the knowledge, skills and attitudes needed to provide appropriate care for patients whose visual capabilities, after compensation for their refractive error and use of standard aids, are inadequate for the efficient performance of vision-related tasks in their vocation, avocation, social interactions or daily living." Note how closely this definition relates to the previously stated definition for "rehabilitation". This definition means that low vision care would involve any means and any person who was in need, where ordinary spectacle correction was not adequate, regardless of any arbitrary numbers assigned to his or her vision specifications. Under this definition it is understood that it is possible for a person to have low vision for some functions and not for others. Thus the labelling of individuals as blind may be abandoned in some cases. Many persons with relatively shallow



forms of macular degeneration who have no need to see fine detail, may go through life without any handicap and without anyone else even being aware of their impairment.

The World Health Organization speaks of four components of a vision problem: disorder, impairment, disability and handicap. A person may have a disorder which does not lead to an impairment. Likewise, an impairment may not lead to a disability. And finally, a person may have a disability which does not result in a handicap. Low vision care's goal should be to see to it that impairments and any resultant disabilities cause minimal or no handicaps.

This approach to low vision care and rehabilitation, over the long term, should have far reaching effects, beyond the care itself, on the lives of the partially sighted. When a person is categorized as "blind" there are personality and living effects that are more devastating than the "blindness" itself.

The low vision individual may be even more discredited. He is in limbo, in "no man's land". He is not fully sighted and under traditional definitions, he may not be considered "blind", thus is not eligible for what aid is available. Many do not seek aid because they do not wish to carry the stigma of being "blind". Some who make errors, especially when the visual impairment is not apparent, may seem to be dull or stupid and are thus categorized.

This is especially unfortunate in the case of young children where parents are reluctant to seek aid because the child would be labelled as "blind". Wouldn't the effects on the child be more positively life moulding and thus a benefit to society if he were categorized in terms of his capabilities and specific needs rather than as a "blind" person?

I hope that all of us attending this conference will keep in mind, not only here but afterwards, the dangers we face and the harm we do when we, as professionals, label people and stereotype them as "blind".



Now I want to discuss some more specific aspects of low vision and low vision care. In the United States the statistics on prevalence of legal blindness are only fair, while there are no reliable statistics on the partially sighted at all. Thus, we can only make educated guesses as to the numbers of people who could be served by low vision care.

The United States Department of Health, Education and Welfare (HEW) reported for 1979 that there were 1.61 legally blind per 1,000 population. This was based on the blind registers in a Model Reporting Area. This figure is undoubtedly low as many persons who are legally blind never get on the official register. The National Society for the Prevention of Blindness for 1966 estimated that 2 in 1,000 school children were partially sighted. Ian Bailey in 1975, used results from England published in 1968, of 2.11 legally blind per 1,000 population, to interpolate that there were approximately 28,000 legally blind in Australia. He further calculated about 3,500 new cases each year.

Perhaps this is the best place to point out that studies have shown that only 14% of the elderly legally blind have no useful vision. When we consider all ages, the prevalence of total blindness is substantially lower. Sam Genensky of the Rand Corporation in the United States, in May, 1978, by making several assumptions, calculated that less than 7% of the entire visually impaired population are functionally blind. He defined the functional blind as those who are totally blind or have at most light perception or light projection. Thus, the large majority of the legally blind should be added to the unknown numbers of partially sighted who may benefit from low vision care.

Brazelton, in 1964, estimated the partially sighted prevalence conservatively at 5 to 10 per 1,000. The United States National Center for Health Statistics in 1977 reported the prevalence for "severe visual impairment in both eyes" as 6.5 per 1,000. If we are talking about the full range of low vision rehabilitation, realizing that all persons do not require the full range of services, I would not be surprised if 10 to 20 persons per 1,000 could benefit from all or part of low vision care.

Returning now to the subject of success and how realistic our expectations might be, I have already given the success rates of IHB and stated that many other clinics and private practitioners have achieved similar and higher results. I suspect that the success rates of similar studies would be higher today and could be increased even more if certain changes were to occur.

The first change involves the attitudes of the entire eye care profession. The average general eye practitioner does not routinely refer all patients who could possibly benefit from low vision care. It is usually only those patients who are persistent in requesting that something be done who are eventually referred. Even those eye practitioners who do refer tend to screen the patients they send. My experience is that this screening is usually based on invalid assumptions.

One of the golden rules of the successful low vision professional is that he or she will attempt any mode that may benefit the patient, regardless of any preconceived ideas concerning impairments, optics, or theories of rehabilitation. That is not to say that absolutely anything and everything will be attempted. Obviously, one would not attempt any procedure that would affect a patient adversely. But the true specialist will not eliminate techniques based on purely objective findings. This means screening patients for low vision care based on ophthalmoscopic findings or particular disorders must be abandoned.

Mrs. Vera Schiller, the Western Regional Representative of the National Center for the Deaf-Blind Youths and Adults in the United States has stated that any visually impaired person not having bilateral ocular prostheses should have a low vision evaluation. There is a lot to be said for this concept. Nothing can be done if it is not attempted.

Another reason I think studies today would show higher percentages of success, even with the slow changes in attitudes, is because over the past five to ten years there have been significant advances in knowledge and technology. In addition, there have been new types of professionals added to the team plus an increase in the number of all members academically trained.

Before leaving the discussion of success we must ask how we can define it. A very superficial statement could be made that any programme could be considered successful if at least 70% of the cases were being rehabilitated. This assumes that the case load would be representative of at least all clinics serving the legally blind. Obviously, if a clinic were to screen out all difficult cases, the percentage figure would be very high but would not reflect an overall successful programme.

It is much more difficult to identify the successful individual patient. I stated earlier that IHB actually interviewed patients some time after the care was completed. But they do not say what their criteria of success were, other than what the patient thought. In addition, their report was basically an optical aids survey. What about the patients who receive no aids? Are they successful in some cases? What about the patient who is instructed in the proper use of illumination or is taught to use eccentric viewing properly? What about the hemianopic patient who uses Frenel Prisms for a while, but is then able to discard them because he has learned through the use of the prisms to be more aware of his peripheral field problem? I think these are just as successful as a patient who wears some sophisticated optical device.

In view of the functional definition of low vision, my feeling is that an individual case can be considered successful if the needs and goals of the patient have been met. This assumes that the goals are realistic. Obviously, at the present time, it is unrealistic to expect that a totally blind person will be able to operate a motor vehicle properly. But even this is not out of the realm of possibility for the long term future.

Even this definition is not all encompassing. There is the situation of the patient who is unable to read because of low acuity. When shown that he can read with a microscopic lens, his response is that he will not read if he must hold the material *that close*. Now how do we classify this case? Certainly, when the individual first arrived he could not read. When he left he could read, but he *chose not to*. He is no longer "blind"; he could read if he chose to. Of course, we would have hoped that the

efforts of the full low vision rehabilitation team would have altered his thinking. But the fact remains that in spite of changing the individual's self-image away from that of a blind person, we did not meet his original goal, even though it was realistic.

Were we successful? I think I have to leave this decision to you and those who set the parameters for the statistics in individual studies. I certainly think that a great service was accomplished for the individual, even though in terms of complete rehabilitation we were unsuccessful. Who is to say what effect this change in self-image may bring about in the individual's daily life? And sometimes after a while the patient, after going through new thought processes, will eventually return for the aid.

Next let me discuss some of the needs of individual groups. I will do this fully realizing that some of my remarks will be made by speaking outside my field as a doctor of optometry. But let me assure you that my information comes from those who are extremely competent in their individual professions. First we must realize that not only do needs vary with age and individual life style, but the needs of a specific individual may vary merely because his everyday circumstances have changed.

I am sure that everyone here recognizes that we all have psychological needs. I will not go into all of them here, but will merely mention some of the more important ones. Most people seem to feel the need to fit the normal mould and thus be accepted by the rest of society, especially in those areas where others may judge that we are less than a whole person. Most of us also feel that we must meet society's expectations in terms of performance at least in general areas of operation. It seems, at least in the United States, that it is psychologically shattering if a teenager, especially a male, is unable to drive an automobile. Somehow he equates "driving a car" with manhood.



Psychologically, the congenital low vision population may be ahead of their adventitious counterparts. Those having low vision from birth seem to be able to learn to cope better and easier with their situation over a period of time, as they learn to cope with life's other problems. Part of this may be due to the omission of the trauma involved in adventitious vision loss. They are also aided in not having to compare their performance after the vision loss with the performance with their previously normal vision.

The personalities and adjustments of those with congenital low vision will be shaped, like all others, by their interactions with parents, teachers and their peers. The final result will depend upon how these contacts view visual impairment. If the parents, teachers and peers are overly protective or pitying or have guilt feelings, the individual may very well become withdrawn, fearful, and never gain a measure of independence.

The needs of children include the ability to perform in school, both at far and near distances. This may not only require low vision aids, but may necessitate special educational resources. Children must also be able to take part in as many activities as possible with their peers. This means that even the special resources should be carried out in the normal classroom setting whenever possible. Play activities should be protected only when there is real danger of harm. Children also require proper counselling so that they may arrive at an acceptable self-image. This counselling *must* also include the parents. The child and the parents must be guided in arriving at *realistic* goals and *limitations*.

As congenitally low vision persons age, their needs change, but are really not much different from their adventitious counterparts. The big difference is that the psychologically mature congenitally low vision person is able to cope with the changing needs in an easier manner.



The vast majority of adventitious low vision occurs in the middle aged and elderly. Adventitious vision loss usually results in a series of psychological responses. The time intervals may vary with the individual. First is *shock*. It is too painful to think about the situation. Shock is followed by *depression*. This is characterized by self-pity, hopelessness and lack of confidence. Depression is followed by *disbelief*. The patient searches for a cure and refuses to accept the diagnoses and prognoses of his doctors. Disbelief may be followed by *denial*. In this stage the patient denies the existence of the problem and thus refuses any type of aid.

During all of these stages, counselling is the proper therapy. It is a gross error to prescribe any low vision aids. Only when the patient finally reaches the stage of recognizing and accepting the problem can the entire body of forces of low vision care be brought to bear.

During middle age, employment is a great problem for the individual with impaired vision. The person must be able to perform in such a manner as to compete in the job market. Even if he competes as well or better than his sighted colleagues, the problems inherent in society's stereotype of the visually impaired still exist. The person with low vision, when it is known, is always being watched. If he hides his low vision or it is not readily apparent, many times his co-workers and others think he is dumb or slow. Depending on how they relate these feelings, the low vision person may begin to change his self-image so that he develops feelings of inferiority. Some low vision persons become overly aggressive in order to compensate for these feelings.

In addition to employment problems, the middle aged low vision person must cope with all of his daily living needs: transportation, shopping, cooking, grooming, sexual needs, etc. Progress has been made in the past in meeting some of these needs. Only recently has any effort been given to meeting sexual needs. It seems that society has thought that visually impaired people are asexual.

During adult and middle age, the psychological needs of the low vision person are accentuated. The low vision middle aged person must be able to relate properly and receive suitable respect from his family, friends and others with whom he must deal. Unlike the child and the elderly, he may be judged to be less than a whole person because in his age bracket he is not expected to be dependent. His worth may be decreased in the eyes of others. He is expected to play the role of the "blind man". If he does not play this role, he may be thought to be overly aggressive and thus shunned.

Low vision aids and counselling must reduce the handicap so that the person can perform properly and, over a period of time, earn respect for what he can do, rather than having his stature based on society's appraisal of his impairment.

Depending on the individual, the elderly's needs may or may not be as complicated as the previously discussed groups. Some elderly people like being dependent and develop this characteristic long before sustaining any vision loss. The needs of the elderly are also affected by their level of activity, which varies greatly among individuals.

Some elderly people become isolated from family and friends and thus their needs in caring for themselves become more acute. Add to this decreasing good health and the deterioration of other faculties, such as hearing, development of physical problems such as hand tremors and decrease in mobility, and one can expect some elderly to have needs just as complicated or more so than those of the middle aged. Because of isolation and loss of hearing, reading may become especially important to the elderly.

The low vision care of the elderly sometimes can be a real test of the techniques of the low vision team. Because of the factors already mentioned, additional aids such as reading stands, special illumination devices and other non-optical aids are needed. Often standard aids must be especially adapted for their use.

The elderly tend to be less flexible and their responses and learning processes are slowed. Thus evaluations, training and counselling require a much slower pace and must be accomplished with much patience and understanding. I must say, however, that as a low vision practitioner, some of one's most rewarding experiences in low vision care are those involving the elderly.

In closing, let me repeat the title of this presentation:

"Rehabilitation: An Essential Component of Low Vision Care."

I hope I have demonstrated that vision rehabilitation and low vision care are interdependent and perhaps are one and the same thing. One cannot have one without the other.

Some progress has been made in recent years in obtaining increased services for the visually impaired. But expansion is slow relative to the increasing need due to lengthening life expectancy. More patients need to become aware of the availability of services and what those services can do for them. Vision professionals also need education regarding the value of these services.

The interaction between the different professionals must be continued and increased. All must set aside their jealousies and be willing to share their information and expertise in the interest of the patient.

We need more eye practitioners and other professionals willing to devote their time to this specialized field. This will require a change in remuneration levels to stimulate more interest in the field and more funds will need to be allocated to increase training facilities for those professionals.

More funds must be available to carry out the care programmes for patients, including the supplying of aids and services when the patient is unable to meet those financial demands himself.

Many of these goals rest on our ability to educate the decision makers and society in general. Society must come to realize what visual impairment really means and must be induced to discard the old stereotypes. Society's benefit will be the creation of more independent individuals who not only will no longer require increasing high levels of public assistance, but will be able to make substantial contributions to society in the same manner as any of its other members.

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## EDUCATIONAL APPROACHES TO CHILDREN WITH LOW VISION

Hugh S. Taylor

## The Organization of Educational Provision for Low Vision Children

Australia presents a diverse range of educational systems serving visually impaired children. There is total government responsibility exercised through the Education Department for visually impaired children from birth to school leaving age, as in South Australia. At another extreme there is the Victorian example, with responsibility divided between the Health Department for children up to six years and the Education Department for children over six. The private schools in Victoria, St. Paul's and the Royal Victorian Institute for the Blind (RVIB) School, offer the only special school accommodation for visually impaired children in the State. (Deaf-blind children are catered for by an Education Department school). The Education Department serves over three hundred and thirty children via the Visiting Teacher Service; all but ten of the children in this service have usable vision.

The Victorian system mixes totally blind and low vision children and each of the services mixes tactile and visual learning. The needs of the low vision child are probably better met by avoiding a further sub-division of the system, which would probably make their claims for special educational assistance less effective than at present. Visually impaired children, even as one group, are the smallest set of children with special educational needs.

A missing link in the Victorian system is a resource room or unit, which might act as a half-way house for children in the more remote areas of this State, who require more intensive teaching and withdrawal from the regular class for part of the day. If a child cannot be maintained in the regular school through the visiting



teacher's efforts, the only special alternative is removal to Melbourne to attend one of the residential special schools. Children in the western suburbs of Melbourne might also benefit from a unit based in their region. Services to deaf children in Victoria have included units for some time and elsewhere, where integration is successful, unit provision is part of the total pattern (Reynolds, 1962). (See Figure 1, p.83).

The RVIB School has begun to operate as a resource base for children supported for some or all of the week in their regular neighbourhood schools. They may attend the special school for intensive braille, typing, orientation and mobility, or other specialist assistance when this proves impossible in the normal school. This flexible use of the special school means that it forms part of a continuous system of provision for the visually impaired child.

The argument over integration or segregation will be buried for good once the system develops sufficient flexibility to meet the needs of each child, offering ease of movement between the different types of provision, no longer demanding an "either - or" decision.

One easy way of assessing the effectiveness of the educational effort devoted to visually impaired children will be to examine the number who are crossing the boundaries within this pyramid. Professor Ward of Macquarie University suggests that the effectiveness of the system may be evaluated by studying changes at the margins or thresholds, an idea familiar to economists (Ward, 1979).

#### How Common is Low Vision in Children?

Discussion of the form of educational provision is not merely an academic pastime.

Fine's figures from the United Kingdom indicate the effects of the different styles of service delivery. In Bradford, Hull, Birmingham and York, where daytime schooling was available, between 7 and 8

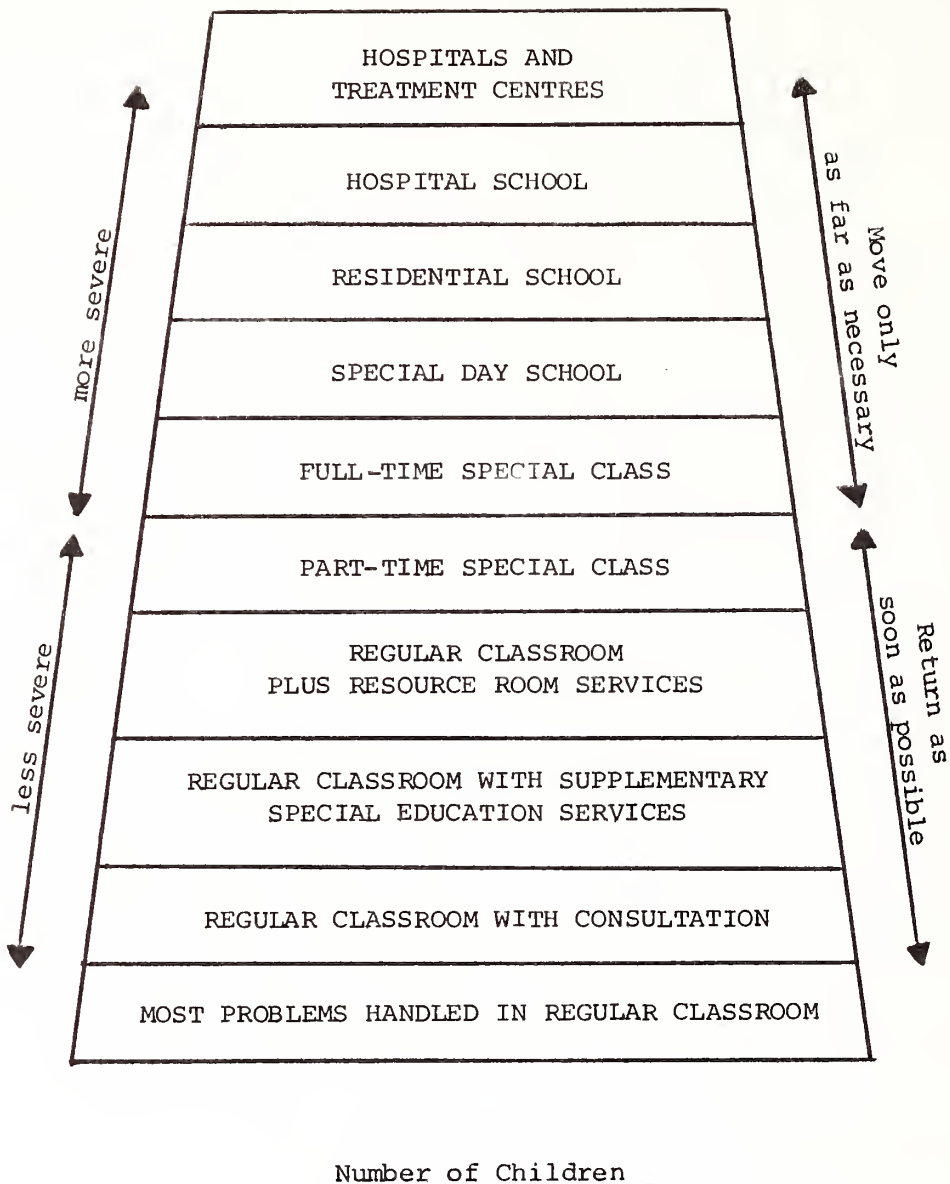


Figure 1. Special Education: A Point of View

children per 10,000 were recognized as needing special education as partially sighted. In Greater London and the Midlands, the rate was 4 per 10,000 whilst in areas where there was no local provision, less than 1 child per 10,000 received special education due to partial sight. Children in these areas struggled along in ordinary schools, without any extra help.

A rate of 1.6 per 10,000 for the blind group showed much lower regional variations, as the placement of the blind pupil was usually straightforward, there being no alternative but a school for the blind.

These figures together (1.6 and 8 [maximum] ) give a close comparison with the American figures for all visually impaired, at 1 per 1,000 (10 per 10,000) (Jones and Collins, 1966).

Victoria has a school population in excess of 830,000 and should, therefore, have more than 800 children of school age who are visually impaired (Australian Bureau of Statistics, 1979). Add to these children under school age, of whom over 150 have been identified (Taylor, 1980) and add those in institutions, who may well be undiagnosed (Warburg, 1979), and a figure easily in excess of 1,000 children of school age or younger is demonstrable.

#### What Characterizes the Low Vision Child?

The idea of describing a typical low vision child is more ridiculous than describing the typical school child, as all the individual characteristics which comprise this "normal child" are complicated by the addition of differing levels of visual functioning in the partially sighted group.

The danger of generalization is indicated by several studies which showed that children with more severe visual impairments were academically more able than children with lesser impairments

(Bateman, 1963, Fine, 1968). The truth of these apparently paradoxical studies is that the more mildly visually impaired children appeared in the groups in question, because their low levels of cognitive functioning, working in combination with their visual impairments, rendered them multiply impaired and educationally handicapped and brought them to the attention of the educational services for the visually impaired in their respective countries.

A severe visual impairment does not guarantee a high level of cognitive functioning, neither does a mild visual impairment imply mild mental retardation.

Landsdowne (1969) highlighted the danger of painting a picture of the typical low vision child when he concluded a review of the literature by stating that: "We may say that children in our special schools and classes (for the partially sighted), at least in America and in England, are dull, emotionally disturbed, retarded and misunderstood." He continues, though: "Many teachers could, with justification, question this conclusion, which is intended to point out the need for a deep, wide-ranging, well controlled survey as a preliminary to more detailed work." The need for such a survey is as urgent in Victoria today as it was ten years ago, when this was written.

Birch and Tisdall, in their large-scale survey in the United States (1966) showed a picture of underachievement, with 6th Grade children on average 2-1/2 years behind their peers, yet possessing normal IQ's. Kell (1965) writes: "If we adopt a lax attitude towards their performance .... merely because they are handicapped we are treating them as less than full human beings".

Cameron (1979) writes, as a person with low vision: "The danger, to my mind, is to restrict an albino's activities, on the basis of assumptions made by people who are not albinos themselves, and who have no experience of how we cope with day to day events. It is all very well to say we cannot read letters on a chart, but if we can do proper jobs and lead normal lives, does that really matter?"



Nevertheless, if we ask what characterizes the low vision child, it is a slower working rate, reading difficulties, with or without aids, untidiness, postural problems, spelling problems, inhibitions, indistinct awareness of things, inability to judge speed and distance of moving objects and, sadly, underachievement, coupled with lowered expectations by teachers and linked with the child's slower rate of completing work (Lumsden, 1934, Birch and Tisdall, 1966). One description, that the low vision child lives in a world of speculation, might, in fact, describe any young person. The major distinction is that the low vision child must do more guesswork when the picture is lacking in quality and detail.

#### What is Special about Teaching Low Vision Children?

The limitations imposed by low vision on perception and cognition may be summarized under two major headings, the restriction of the range and variety of experiences and the reduced control of the environment and of the self in relation to the environment.

The aims of any education may be very briefly summarized as the establishment of literacy, numeracy and communication skills, the development of social and vocational competencies and the successful maturation of the individual.

The basic guidelines for teachers of low vision children are best described as "child centred". The keynotes are in meeting the child's individual needs and enabling him to gain skill in helping himself, in other words, in learning how to learn. Bennett's study (1976) of primary school teaching methods in Britain showed that the child centred approach produced the best and the worst results - not a surprising finding when the importance of the teacher is considered in the success of this method.

Surveys show that visually impaired children are not ranked by teachers as a desirable group (Tobin, 1972). The selection of the teacher is crucial to the success of these children. Professional interest, ability with normal children, awareness of normal developmental levels, and a positive attitude are crucial. Empathy, but not "dedication". Heaven preserve low vision children from selfless, dedicated individuals! The result so often is a child with no conception of other people's feelings, but with an overdeveloped desire and ability to engage everyone in fulfilling his every need. Realistic expectations are crucial, stretching the child so that he realizes his potential and his limitation. Special education has been dogged for too long by low expectations (Warnock, 1978).

Cooperation between home and school is essential - a vital link which has been absent from education in Victoria. The teacher has worked in the secret garden of the curriculum for too long, with parents being considered the lowest form of life. Visits to children and their parents in their own homes are crucial in many cases for a total understanding by both sides of the potential in the child. School staff and parents working together should overcome some of the problems encountered in the Head Start and Milwaukee Programmes (Tizard, 1976), which failed through their concentration on the child alone. The International Council of Educators of the Visually Handicapped long ago passed a resolution demanding education for parents (International Council for Educators of Blind Youth, 1976).

The most reliable studies on the adjustment of low vision children show that a low degree of parental understanding typifies a high proportion of the group (Underberg, 1958, Cowan, 1961). Educationalists should be giving attention to early intervention programmes which will enhance the child-parent relationship and enable the parent to see the child's successes and potential. Fortunately, such programmes are developing in Melbourne and over the past two years there has been a huge growth in the effort invested by the RVIB School in this direction (Taylor, 1980). Figures illustrating this growth will be given during the workshop session of this conference. (See p.425).

If early intervention can maximize the family's support of the child, more children will arrive at school with the requisite entry skills and fewer children will suffer from institutional care. The Western Australian Mental Health Authority has shown the effectiveness of family support in dramatically reducing the number of children requiring institutional care (Hamilton, 1980).

The child's self-concept and adjustment amongst his peers, who may be all too willing to ostracize and torment, are features which can so easily be weakened by inadequate parental understanding. The child's confidence in himself is easily endangered, yet successful learning requires independence, motivation, interest and the ability to ask for help when necessary, as well as to refuse aid politely but effectively when not required. The social acceptance of handicapped children in normal schools is not a success story. So much relies on the model presented by the teacher and the child's perception of his place in the family.

Successful approaches to the education of visually impaired children should be:

- . individual: geared to the child's cognitive and visual abilities;
- . concrete: providing a rich variety of real experiences, with time for interpretation and appreciation, time to examine and handle things closely and carefully;
- . unified: activities and experiences need to be linked, so that otherwise fragmented and poorly seen or understood concepts and experiences are placed in their wider context.

The approaches should enhance self-activity, the stimulation of curiosity, motivation and discovery and provide extra incentives, especially if tasks take longer to complete. There should be opportunities for children to do things for themselves and the right not only to succeed, but also the right to fail. So often

over-protection insulates the child from a real understanding of his potential.

#### Curricular Modification, Adaptation and Additions

Apart from methods and approach, there are important additional ingredients in the curriculum which some low vision children need. Orientation and mobility training is required by some, particularly those with night blindness. Low vision stimulation is now a key ingredient in the work done by the teacher trained to work with visually impaired children. Gone are the days of sight-saving, when classes could be seen with paper bags over the heads, to stop them reading braille by sight. No longer do schools or teachers embrace the motto "Reading and writing shall not enter here", which was engraved over the doorway of one of the first schools for "high myopes" in London (Pritchard, 1963).

The training of visual discrimination, following the work of Barraga (1964), developing visual motor coordination skills, working with 3D and 2D materials, letter recognition skills and near and distant tasks, are now emphasized in visual perceptual curricula. Listening skills are important for the child whose reading speed is low. The use of speech compressors enables the child to comprehend the spoken voice up to 275/300 words per minute, given practice. Fatigue problems with print can also be reduced by varying activities in the classroom and by using typewriters to speed the production of legible written work. Attention to lighting, the use of reading stands to avert fatigue due to postural strain, clear print, large print and glare-free paper and writing surfaces are also important aids.

Alternative strategies for reading may be required when only a few letters are visible at one time, due to scotoma, tunnel vision or hemianopia. Projection and magnifying equipment, photo-enlargers, rear projectors, microfiche and closed-circuit television systems are all in use. An understanding of the value of the low vision



aids available is essential, so that the student may achieve the most efficient use of the various devices.

#### Low Vision Aids, the Low Vision Clinic and the Importance of Accurate and Early Diagnosis

One of the major developments affecting the success of low vision children in schools has been the prescription of visual aids of a sophistication and variety which would have been unimaginable thirty years ago. The establishment of the Low Vision Clinic in Melbourne was a great step forward for children of school age and younger.

During the first five years of the operation of the clinic (Robbins, 1978), the ten to nineteen age group had double the attendance rate of any other ten year cohort, except people aged sixty and over. Helen Robbins writes: "The distribution does not reflect a true reduction in incidence of low vision after age twenty, but rather the peak shows the effects of actively seeking out patients in the school age group, from the Visiting Teacher Service and the schools for the visually handicapped." The educators' awareness of the significant advantages for children of receiving the best aid, following a most accurate assessment, can be seen from these figures.

There are probably more underrated or unREFERRED cases under ten years of age than in any other age group and this, too, is reflected in the figures. The switch to secondary school, with added demands on reading vision, together with the expression of diseases such as retinitis pigmentosa or juvenile macular degeneration in the teenage years, doubtless influence the figures. It is interesting, however, to note that more children entered schools for the visually handicapped in Britain at the age of twelve than at any other age (Hechle, 1976). Improved low vision services and the educational support service for children in normal schools should avert this situation in Victoria.

Helen Robbins' study of the first five years of the clinic included 1,419 patients. In 1979 there were 708 new patients. It would be interesting to discover the number of children under ten years of age in the latest figures.

Another group to whom more attention must be given in the future is the group of low vision children with multiple impairments. Estimates of the proportion of children with low vision who are multiply impaired vary, but it is certainly safe to assume that it is 50%, if not more. The survey of the mentally handicapped population in Denmark by Warburg (1979) shows the high incidence of visual defects in their institutionalized population.

Attitudes vary amongst staff and specialists in institutions, but it is not uncommon to hear people questioning the value of low vision aids for these people. The strong and effective interest taken by the optometrists and ophthalmologists associated with this clinic in the problems of assessing levels of vision in young and multiply handicapped children leads me to hope that the days when professionals question the value of spectacles or low vision aids for the multiply handicapped child or adult are strictly numbered.

The rate of discovery of low vision in people living in mental hospitals is accepted as being too low; too often, inappropriate behaviour is ascribed to the mental retardation rather than visual problems (Warburg, 1979).

The importance of visual aids for low vision children is illustrated by Fine's figures for all children in schools for the partially sighted in the United Kingdom (Fine, 1968):

Use of visual aids:

None	476
L.V.A.	43
Contact Lens	11
Bifocals	5
Glasses	803
Hand Lens	36
Total	1,374

Visual aids are not a panacea. There are problems of the acceptance of aids in the classroom, ridicule by other children, the teacher's belief that the child's sight is restored to normal limits when using the aid, and lighting and postural problems. But they are a great advance since the days of sight saving.

Early detection in all groups, early intervention and family counselling, close cooperation between the sources of early intervention, the School Medical Service and the Low Vision Clinic, will continue to bring the low vision child closer to his potential. Continued cooperation and close communication between the educational and medical professions relating to the assessment and handling of these children can only produce greater benefits.

#### How Effective is Education for Low Vision Children?

Children still fall through the net of provision. They are still detected late with visual problems, they fail to thrive in normal classrooms after years of failure and they still arrive late in their school careers in special schools (Hechle, 1976). The provision of more extensive support to those in normal schools, the provision of units or school based resource rooms, earlier detection, more accurate diagnosis, early intervention with pre-schoolers, all these factors can truly help to remedy some of the present deficits.

There remains an unanswered question: What happens to the child after leaving school, what are his prospects for gaining entry to a Technical and Further Education (TAFE) College or to higher education, or access to an apprenticeship? The employment problems of the low vision school leaver are certainly more acute than those of the fully sighted leaver. The occupational status of employees with low vision is known to be lower than that of the sighted, and in some ways the partially sighted individual is at a greater disadvantage than the totally blind person, who attracts funds and agency assistance more easily and who is entitled to the blindness pension, free of income test.

A sound and detailed study of the employment and post-school experience of the low vision student is still required. Such a study should go some way towards answering the question as to the effectiveness of educational provision. (I am already setting up a study of this kind, and hope that within two or three years some preliminary findings will be available.)

Whilst one hopes that educational institutions for low vision children incorporate the best of modern educational practice, the question remains as to whether this is adequate. One writer on the post-school problems of low vision people even suggests that they can achieve benefits from joining blind people, ignoring their potential as sighted individuals (Cunliffe, 1973). When a serious suggestion of this nature can be made, it implies that the position of the low vision person in society is most inadequate. If this conference could give some hope to further improving the status of low vision people, it would have achieved much. If, in addition, thought could be given to improving methods of diagnosis and rates of referral for multiply impaired people, a major step forward would have been taken.

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## THE PREVENTION OF LOW VISION

Douglas J. Coster

There are in excess of 40 million people in the world with vision so poor that they cannot function as independent individuals. This constitutes a global blindness rate of 1% and represents not only a distressing degree of disability but a mass of human suffering, an enormous burden placed on individuals and communities and indeed on those who are least able to afford it, for blindness rates are highest in economically underdeveloped regions. Not that the highly industrialized nations are spared. In these communities, higher levels of visual function are necessary for one to remain socially and economically independent and the cost of educating and supporting a blind person is very high.

In recent years it has been emphasized that much of the world's blindness is avoidable. This realization and an awareness of the economic implications of blindness has led doctors and politicians to a greater degree of cooperation and commitment in projects aimed at the prevention of blindness. There is now a coordinated international effort involving governmental and non-governmental agencies directed at the eradication of avoidable blindness.

For those committed to this aim, the first step was to classify and define blindness in a way relevant to the organization of programmes aimed at the prevention of blindness. A person can be considered blind when his vision is impaired to the extent that he is unable to take his place in his community as an independent individual. Of course the degree of visual function required to function independently in different communities varies considerably. Therefore, for the purposes of epidemiological work, more quantitative standards have evolved which get around the problem of defining blindness in terms of social or economic disability.

The World Health Organization considers a person blind when his vision is less than 6/60 in the better eye, that is, categories four and

five with an I.C.D. 9 classification (Table 1, p.105). Blindness is also classified according to the underlying disease process which has brought it about (Table 2, p.105). The first step in all community medicine or public health programmes is to define the problem with basic epidemiological data.

#### Epidemiology of Blindness

Blindness rates are related to the degree of socio-economic development of a country or region (Table 3, p.106). In developed countries the rate is usually less than 0.2%, but it is much higher in underdeveloped countries or regions such as Central Africa, where the blindness rates are as high as 10% along river valleys and considerably higher in some villages. Although the blindness rate corresponds with the degree of socio-economic development of a region, local environmental factors are important in producing marked differences in the rates within regions.

Major causes of blindness in the underdeveloped regions of the world are trachoma, onchocerciasis, malnutrition and cataract. In developing nations, agricultural and industrial injuries add to this, for so often industrialization precedes safety legislation. In advanced urban societies where the life span of individuals is greater, degenerative diseases are the principal causes of blindness, particularly chronic simple glaucoma, disciform degeneration of the macula and diabetic retinopathy.

Somewhat surprisingly, there is more information available concerning the incidence and distribution of eye disease in the underdeveloped regions of the world than in urban societies. In the rural communities of tropical regions, infective inflammatory scarring of the outer eye produces much of the blindness and wherever this pattern occurs, cataract is common. (This is not to suggest a casual relationship). So too is malnutrition.



So important are these diseases of the outer eye as causes of blindness on a global scale, that they deserve more detailed description.

#### Trachoma

It is estimated that 400 million are infected with chlamydia trachomatis and have clinical evidence of the infection. Where the disease is endemic, the prevalence rate is high but the blindness rates vary greatly from one locality to another. When there is a large reservoir of infection and high pressure or re-infection and frequent bacterial superinfection, the blindness rate is high. Blinding trachoma occurs when mucosal scarring is sufficient to distort the eyelids and produce trichiasis, for this greatly accelerates corneal scarring and opacification. The disease is endemic in the Middle East, North Africa, Latin America, Asia and Australia. It is common in these areas where the infection rate is high that 1% of the population is blind, more than 4% have such poor vision as to be unable to work (economically blind), and as many as 10% have a serious impairment of vision. The impact of this level of disability on socio-economic development of a community is enormous. In 1951, it was estimated that 20 million working days were lost each year in one North African country as a result of trachoma and associated infections of the eye.

#### Onchocerciasis

In many parts of Central Africa, 70% of communities are infested with *Onchocerca volvulus*, a microfilarium with the capacity to produce devastating eye damage. As many as 40% of an infected community can have impaired vision and 10% may be blind. In some villages, as many as 40% of the men are blind.

The main vector is *Simulium Damnosum*, a black fly inhabiting the immediate vicinity of fast flowing streams. Not only does the blindness rate vary from village to village, but those in the village who have the most contact with the river, such as boatmen and fishermen, have the highest blindness rate. The eye is destroyed by two mechanisms, corneal scarring from reaction around dead worms in the cornea and a choroidal-optic atrophy resulting from an analogous process.

#### Xerophthalmia

It is estimated that each year 250,000 children go blind from malnutrition in Indonesia and a similar number in India. Corneal destruction occurs as a consequence of Vitamin A deficiency which usually occurs as part of a protein-calorie malnutrition. The disease is largely confined to the rice-eating regions of Asia but occurs elsewhere too. Those affected are children, usually at the time of weaning. Such blindness is completely avoidable with adequate dietary intakes of Vitamin A.

#### Cataract

Wherever blindness rates are high, cataracts are an important cause of blindness. Lens opacities account for 55% of the blindness in India. The cause of this phenomenon has not been established. Certainly cataract cannot be prevented or treated medically, but vision is recoverable with surgery.

## Blindness in Urban Communities

Blindness rates in the urbanized, industrialized communities of the temperate climatic zones are much lower than those occurring in underdeveloped nations. In communities where the life span is long and the general environment kind, degenerative disease, rather than infection, is the predominant cause of blindness.

Epidemiological data on the pattern of blindness in developed nations is limited. The major sources are the Blind Register for England and Wales, the "Model Reporting Areas for Blindness Statistics" (MAS) and the Framingham Survey from the United States.

Very little data is available on the pattern of eye diseases in Australian cities, although the Government statistics set out a blindness rate of 0.6%, two or three times that expected for an economically advanced urbanized country. The basis of this alarming figure is the method of data collection (lay reports to household surveyors) and the criteria for blindness which were very loose.

The Blind Register for England and Wales seriously underestimates the blind population because registration is not mandatory, but it does give important information about the pattern of disease producing blindness and its relationship to age. Although more limited in terms of area covered and population surveyed, the Framingham Survey provides important information, additional to blindness rates, concerning the prevalence of blindness and disease. Obviously, it is important to determine not only the number of people blind, but the number who have potentially blinding eye diseases. The blindness rates in Framingham were three to four times the level observed in the model reporting areas, again emphasizing the underestimation of disease that is a feature when reporting is not mandatory. The incidence of potentially blinding disease is also high. Diabetic retinopathy was observed in 3.1% of the population, open angle glaucoma in 3.3%, senile macular degeneration in 8.8% and senile cataract or aphakia in 15.5%. All four diseases show a marked increase in prevalence with age.

Blindness rates clearly correlate with the age of the population surveyed and perhaps the incidence of diabetes. This is emphasized in the figures for new registrations in England and Wales. Most registrations occur in the older age groups with 73% of those being registered being over the age of 65 and 54% being over the age of 75 at the time of registration. There is also a preponderance of women which is related to the greater number of women surviving to old age. There has been a great increase in the number of people joining the Blind Register in England in recent years. This is related to a marked change in the distribution of ages within the population. Between 1969 and 1976 the number of people in England and Wales over the age of 65 increased by 12%.

The proportion of old people in the Australian population is much less. In 1978, 9.3% of the Australian population was over the age of 65 and this is expected to increase to 11% by the year 2001 (see Figure 1). The incidence of blindness in Australia will increase over the next forty years as our young population reaches retiring age.

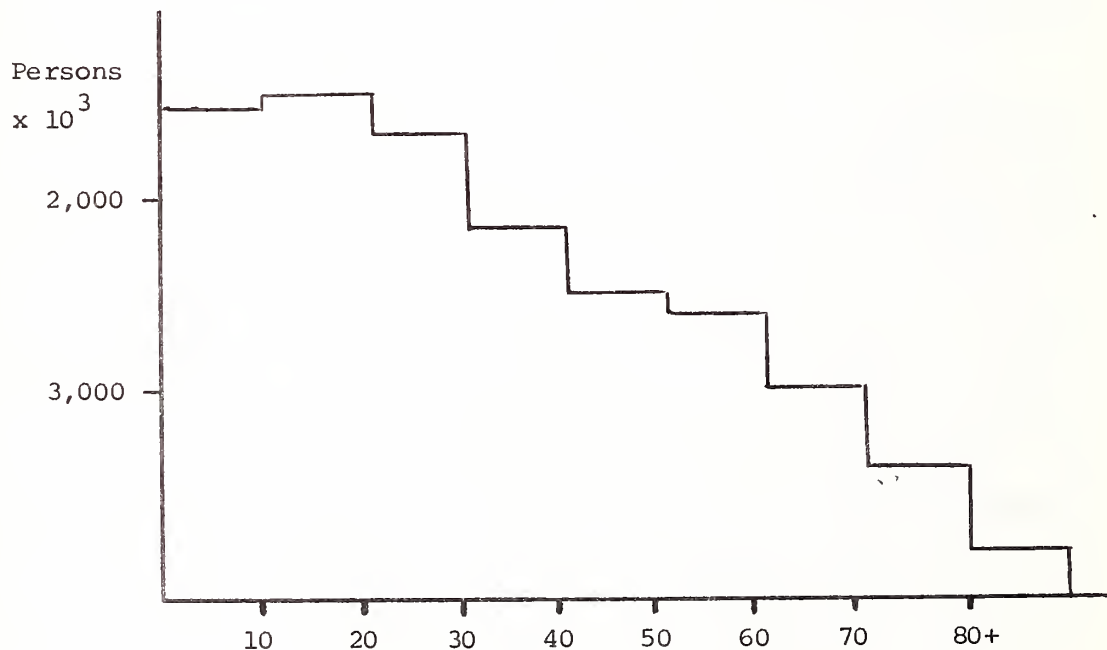


Figure 1: Age distribution of the population on 30 June, 1978: 9.2% of the population were over the age of 65 at that time. This is likely to increase to 11% by 2011.



For a breakdown of the causes of blindness and partial sight, it is appropriate to look at the figures from the England and Wales Register. The important causes of low vision and blindness are markedly age related. Choroidal atrophy and optic atrophy are important causes of blindness in youth. Diabetic retinopathy is the principle cause of blindness in middle age, but neither of these entities makes much contribution to the registrations that are made after the age of 65 when cataract, glaucoma and disciform macular degeneration are the predominant causes of impaired vision (Tables 4, p.106 and Table 5, p.107).

The pattern of urban blindness is very different from that occurring in the underdeveloped regions, for the major cause of blindness is degenerative vascular disease which damages the visual function of the eye by producing ischaemic change and often subsequent neovascularization. There is an important feature of these diseases which must not be overlooked. Disciform degeneration, diabetic retinopathy and chronic simple glaucoma are all treatable. Blindness is avoidable. However, treatment must be initiated before the patient is symptomatic. Once retinal vasoproliferation has proceeded to haemorrhage, diabetic retinopathy cannot be treated; once the sub-retinal neovascularization of the disciform response has produced macular distortion, it is so close to the fovea as to be untreatable by photocoagulation; visual loss from glaucoma cannot be reclaimed. These bare facts necessitate an alteration in our approach to these common diseases.

#### Strategy for the Prevention of Blindness

There is need for a broad based multidisciplinary approach to the prevention of eye disease. Those at risk of blindness need a preventive medicine programme, those with remedial blindness require appropriate treatment, those with low vision require effective rehabilitation so that they can achieve a level of social and economic independence and those with irreversible eye disease look to new knowledge and treatments to emerge from research.

The highest priority is for an energetic public health oriented approach to eye health care. This demands that ophthalmic practice be based at a community level, that public education is such that it enables people to take an intelligent part in prevention programmes, that those at greatest risk of developing blinding eye diseases are identified early. Patients must be given the opportunity to present for assessment before they develop symptoms. At present such programmes are beyond our means both financially and administratively. Certainly we need to plan carefully and continually monitor the effects and cost benefit of public health programmes.

Some programmes are already being assessed and the results are encouraging. The screening of first degree relatives of patients with chronic simple glaucoma has determined that 10% of them have undiagnosed disease. The monitoring of asymptomatic diabetes and the identification of those with ischaemic changes who are likely to proceed to neovascularization and blindness, and the place of prophylactic treatment are currently being evaluated in Western Australia. Similar programmes identifying patients with undiagnosed early disciform change at the macula are also underway.

Such trials must be carefully evaluated. Not only must we be concerned with the effect of these programmes on the natural history of disease, but we must be prepared to examine the cost effectiveness of the programme, since we must not only convince ourselves of the value of such an approach, but we must also convince politicians and administrators, who are more likely to be swayed by arguments based on dollar savings than by biological observations. Although a public health oriented eye health service is mandatory if the incidence of blindness is to be reduced to any degree, the need for basic research cannot be disregarded.

#### Research Priorities in the Prevention of Blindness

There are two obvious priorities for research directed towards the prevention of blindness. The first is to research and develop

programmes directed at better delivery of eye health care. The second is for basic research into the important biological phenomena involved in the production of blindness.

The delivery of health care is a major difficulty and generally falls behind the technological advances won in the laboratory. Treatment modalities that might be quite simple to carry out in one environment may be extraordinarily difficult to conduct in another. Examples of this abound: the difficulty in treating simple microbial keratitis with antibiotics in tropical, developing countries where such infections are a common cause of blindness, the difficulty in using modern treatment such as cryotherapy for trichiasis in areas where trachoma is endemic and the difficulty in achieving successful corneal transplantation in underdeveloped areas where corneal blindness predominates. Not only the technical aspects of treatment delivery need to be researched, but the organizational aspects also demand attention.

Inflammation and neovascularization are the two pathological processes that produce most of the world's blindness. The resources for research into the pathobiology of blindness are considerable and the potential rewards great. There is no shortage of scientific challenge and it is our duty to attract into our area the best scientists. The prospect of controlling inflammation and neovascularization are good, but of some blinding diseases, we have virtually no knowledge. Tragically many of these diseases such as retinitis pigmentosa and optic atrophy blind the young. Intensive, well funded, well directed and conducted research offers the only prospect of eradicating blindness. An ambitious, well supported research programme is the world's best insurance against unnecessary blindness.

	<u>Category</u>
Totally Blind (no light perception) 1/60 or less	5
Less than 1/60 or equivalent 2/60 or less 3/60 or less	4
Less than 3/60 or equivalent (i.e. inability to C.F. at 3m in daylight)	3
Less than 6/60	2
Less than 6/18	1

Table 1.

Type 1	:	Corneal disease preventable, ? curable
Type 2	:	Lens opacities curable
Type 3	:	Other identified conditions
Type 4	:	Undetermined or unspecified

Table 2.



	Population (x10 <sup>6</sup> )	3/60		6/60	
		Prevalence (%)	Number (x10 <sup>6</sup> )	Prevalence (%)	Number (x10 <sup>6</sup> )
Underdeveloped	2,100	1.0	21.0	1.5	31.5
Developing	1,100	0.5	5.5	0.75	8.3
Developed	800	0.2	1.6	0.3	2.4
	4,000	-	28.1	-	42.2

Table 3.

	0 - 64	65 - 74	75 years +
Glaucoma	7.1%	16.0%	14.6%
Cataract	7.6	12.0	21.1
Choroidal Atrophy	11.2	12.9	5.0
Macular Degeneration	4.7	20.5	46.5
Diabetic Retinopathy	18.7	18.6	4.3
Optic Atrophy	15.5	6.0	1.9

Table 4 : Causes of blindness in new additions to the Blind Register for England and Wales between 1969 and 1976, according to the age of the registrant.

	0 - 64	65 - 74	75 years +
Glaucoma	5.7%	15%	12.9%
Cataract	12.4	18.7	28.5
Choroidal Atrophy	14.7	13.6	5.7
Macular Lesions	7.0	24.0	40.3
Diabetic Retinopathy	12.3	12.8	4.9
Optic Atrophy	4.1	2.2	1.0

Table 5 : Causes of visual impairment in new additions to the partial sighted register for England and Wales between 1969 and 1979, according to the age and registrant.

## REVIEW OF SESSION

Bruce Ford

The things we have heard today are strangely familiar: the same sort of themes at many conferences about chronic disability, rehabilitation and surrounding problems. We began with the problem of definitions. From that we went on to the problems of the system in which we work and the professionals that work in the system. Last, but not least, we talked about the two things that always come at the tail end: the client and prevention. Maybe over the rest of the decade we might go to some meetings where the order will be reversed!

Although these were fairly hoary old problems, they were presented in most delightful ways by people who have been doing some very comprehensive thinking.

Allan Freid, in discussing the problems of definition, also came to grips with the problems of how we analyse the various components of disability in the very system of disorder, impairment, disability and handicap, which is the current way of describing the consequences to the individual of the loss or reduction of some body function. We will have an even broader approach if we think of patients or people or clients under the heading of their medical problems, physical problems, psychological problems and social problems.

Hugh Taylor began by talking about the lack of balance in the geographical distribution of services and the inadequate coordination with general services. It is a fact that there are basically not enough services in the western suburbs of Melbourne and in country areas of Victoria.

In 1961, the Commonwealth Government undertook the first of its now six investigations on services to the handicapped, which was a Senate Standing Committee on Handicapped Persons. Each one of those quite expensive and lengthy government studies have made the surprising

observation that our services are uncoordinated, not geographically dispersed according to need and poorly integrated. If you are a Prime Minister and someone presents you with that problem, I think it is best to get somebody else to do another study, because we haven't yet found out how to solve that problem. However, Hugh Taylor gave it some serious thought. His plea for "empathy but not dedication" was also most relevant.

Some difficult problems emerged out of the session. Firstly, we are still restricted by the concepts of our predecessors. Allan Freid, for example, pointed out that the vocational definition of rehabilitation is no longer consistent with modern thinking; of course I agree with that. Douglas Coster also pointed out that we need a good health delivery system, but it is hard to reach agreement on what this should be. I think the confusion relates to the muddled concept that people in the rehabilitation service system have about who they are and how they fit into the total system. This, in turn, reflects itself on our methods of analysis and formulation of objectives for dealing with clients' problems.

The magic word that all these government services and studies have highlighted is *assessment*; we must have assessment units; we must have geriatric assessment centres. But no-one tells you how to do it! What do you mean by assessment? How do you teach inexperienced doctors like I have working for me to do it, particularly if you're not sure what it is. Perhaps we could think more about what we mean by assessment.

I tell the doctors on my staff that every patient, no matter whether he has an ingrown toenail, a fractured femur or low vision, must be thought about under the headings medical, physical, psychological and social. If a patient's problems are not looked at under those four headings, something important is sure to be missed. The psychological area is always the one that is left out.

We continue, like the writers of the reports, to say that our services are poorly distributed, uncoordinated, and poorly integrated. I wonder whether this is the problem. Instead, I begin to think that this is reality, that this is Australia, this is the world. We are



going to have to learn to live with services that are poorly distributed, uncoordinated and poorly integrated. And we will have to build on that because it is so difficult to change existing organizations.



## DELIVERY OF SERVICES





LIGHTHOUSE PACIFIC MEDICAL CENTER

August Colenbrander

The Pacific Medical Center in San Francisco is a private community hospital, but with a long academic tradition. It was the first medical school in the West and later became Stanford Medical School until Stanford moved its medical school out of San Francisco, twenty years ago. We have always had strong eye departments and we have had a low vision service for some twenty years.

Initially, the low vision service operated every other week on Thursday morning with two patients being seen at each session. That was not a very satisfactory service. Five years ago, however, we became incorporated with the San Francisco Lighthouse, a private non-profit agency which provided funds to establish a broader service and to hire what we called a low vision coordinator. That is a nice name because it's very nondescript and will cover anything!

Our first decision was what kind of person to employ as low vision coordinator. Some people suggested a nurse, but my feeling was that nursing skills are not relevant to the work of low vision care. Likewise, I didn't want an ophthalmic technician with a good background in optics, because I knew enough about optics to teach the coordinator. Instead, I sought someone with a background in education of the visually handicapped, in community work, social services and daily living skills. I feel that our service setting, which is basically a two person operation, where I see the patients as an ophthalmologist and the low vision coordinator deals with the daily living skills and social services aspects, has been very successful because of that combination.

Our patients come from a variety of sources, including vocational rehabilitation, referrals from private ophthalmologists and self-referral. We always require an ophthalmological report because we don't consider ourselves to be, nor do we want to be, the primary

ophthalmologist for that patient. We think every low vision patient has some kind of visual or ocular pathology and therefore should be under regular ophthalmological supervision of an ophthalmologist, but it is not necessarily the ophthalmologist who initiates the referral. It's quite gratifying, however, that over the years, we have seen an increasing number of ophthalmologists becoming aware of the fact that low vision patients can be helped and initiating referral.

We generally see patients for almost a full morning. I see the patients first as an introduction to tell them what to expect of the service. I also give them an ophthalmological examination and recommend optical aids. They then see the low vision coordinator, who deals with daily living skills, community services, etc. We cooperate closely with the San Francisco Lighthouse where other services, such as mobility instruction, are available. These services are located in another part of town.

Psychological services have become an important part of the Lighthouse services. For quite a number of years, we have also had a variety of what we have called "visual concerns discussion groups", made up of people who have difficulty getting through the stages of psychological adjustment to their loss. We have had such groups for teenagers, for the middle aged and for the elderly. Most of these groups are of eight or so people who meet once a week over a prolonged period of time, perhaps six months. In this way it is possible to build a tightly knit group with inner group confidence, where participants can deal with each other's concerns. We have seen remarkable personal growth and progression in group participants. These groups, I am gratified to say, are now beginning to spread in the San Francisco Bay area and we are trying to establish a network among the group leaders so that they can benefit from each other's experiences and do not have to start from scratch.

If the population of the United States is roughly 200 million, then we have 100 million people with eye problems, but that includes all those with glasses and normal vision with correction of their refractive eye. Ten million have a real eye problem that reduces vision, but 3½ million of these have that in one eye only, so they are not really the low vision population. There are only 6½ million

who have a real vision problem and this group can be broken up into about 5 million with moderate low vision and  $1\frac{1}{2}$  million with "legal blindness" - 1 million with severe and profound low vision and  $\frac{1}{2}$  million with near-total or total blindness. Breaking this groups into age groups, there are  $\frac{1}{2}$  a million under twenty, 3 million in the middle age group and 3 million elderly.

By the year 2000, the younger age groups will not grow substantially, but the middle and older groups will. This means that if incidence rates remain the same, the low vision population will increase from  $6\frac{1}{2}$  to  $9\frac{1}{2}$  million. Most of the increase will be in the moderate low vision group rather than in the total blindness group. In the age groups, most of the increase will be in the older group, rather than in the younger ones. This means that our whole blindness system will have to reorient itself significantly, because it's now mostly oriented towards the blind rather than the low vision and towards schools for the blind and vocational rehabilitation rather than towards the elderly. I believe that it is very important to consider these kinds of trends if we want to identify needs and where we should put our emphasis in the future.

## DELIVERY OF SERVICES: THE ROYAL BLIND SOCIETY'S LOW VISION CLINIC

Felicity A. Purdy

## Introduction

The Royal Blind Society's Low Vision Clinic is located within the RBS training and resource centre at Enfield in the inner western suburbs of Sydney. It is therefore, in a very real sense, a low vision service within a blindness agency.

This location appears to have an important effect on the people who choose to use it. Because the clinic clients are also blindness agency clients, they tend to be mainly people who, as a direct result of their severely reduced vision, have problems in many areas of their everyday functioning. The vast majority are, in fact, in receipt of the "blind pension".

Two other explanations of this concentration of patients at the more severe end of the spectrum of visual acuity impairment are, however, possible and should be mentioned here. They are:

- . that the clinic is part of the Royal Blind Society;
- . that specialist low vision services (medical and optometrical) have been in existence long enough in New South Wales to permit private practitioners to develop cooperative working relationships with them, fostering expertise in the management of less severe cases.



## Service Delivery Model

The long history of "one discipline" low vision clinics is also relevant in this context in that it has, to a very large extent, shaped the Royal Blind Society's "multidisciplinary" service delivery model, a model which differs from other blindness agency models in one important respect.

At the central core of the RBS model is the client. While he can draw on the advice of his own medical consultants and his RBS case coordinator (either a social worker or a vocational counsellor, depending on his chosen rehabilitation goal), he is essentially free to make his own choice of services from those which the RBS has to offer. These include orientation and mobility instruction, vocational assessment, relaxation therapy, training in the use of closed-circuit television monitors, etc. He may choose one service only, or any number and combination of these, concurrently or in sequence. So, in this model, the low vision clinic becomes one of a number of options, or combination of options, which the client may select in pursuit of his rehabilitation goals.

## Historical Development

The historical precedent for the model goes back to 1955 when the Royal Blind Society first entered into a rather informal arrangement with Professor (then Mr.) Josef Lederer of the Department of Optometry in the Sydney Technical College, whereby rehabilitation clients who asked about the possibility of assistance from visual aids would be told about his clinic. The loose arrangement continued when Professor Lederer and his Department moved to the University of New South Wales. It became formalized when Professor Lederer agreed to provide the optometrical service for the Royal Blind Society's own embryo clinic when it commenced three years ago.



During this twenty-five year history the essentials of the model have barely altered. The Low Vision Clinic remains one, albeit an increasingly important one, of a number of specialist resource services offered by the Royal Blind Society, rather than a central core to which other support and paramedical services are attached.

#### Clinic Services

The clinic offers a fourfold service to its clients:

- . optometrical aids: a full range varying from the simplest spectacles to the most sophisticated electronic devices and everything in between;
- . a follow-up service now in the process of being extended from the clinic setting into the home or workplace;
- . vision training or visual fixation therapy: a new development which is the subject of a workshop later in this conference (see p.429);
- . advice regarding environmental and particularly lighting control.

#### Clinic Personnel

To provide these services, the clinic has expanded from one half day per week in March, 1977, to one full day per week (soon to be two) on which the following people now attend:

- . 1 ophthalmologist;
- . 2 optometrists;
- . 1 orthoptist;
- . 1 optical dispenser;
- . 1 receptionist;
- . 1 welfare officer;
- . 1 accounts clerk.

#### Statistics

These people saw over 300 new clients last year and the clinic had 500 visits in all. Of the new clients:

- . 61% had improvement in near visual acuity;
- . 29% had an improvement in distance;
- . 5% were referred elsewhere for medical treatment;
- . <5% had no low vision problems;
- . <10% could not benefit from the service.

## Professional Education and Research

The clinic also is, and has been from the beginning, vitally concerned with both professional education and research. Graduate and undergraduate students in optometry and orthoptics visit regularly and registrars in ophthalmology have been invited to participate in the scheme.

Research has been stimulated by the postgraduate interest and the results of two of the clinic's projects are the subjects of conference workshops: filter lenses for retinitis pigmentosa patients and vision training (See p.361 and p.429).

## The Role of the Orthoptist

Vision training, which has been developed through the clinic, is the particular province of the orthoptist. It may be appropriate to define her role at this point as it is possibly not as well known as that of the other clinic professionals.

Generally speaking, the orthoptist provides the communications link between clinic staff and the counsellors and instructors from other departments who are working with the client. In addition, because she is available to assist with follow-up in the field setting, she can also act as a resource to clients and to their families. Therefore, while she corresponds in some ways to the "low vision aid therapist" described in the American literature, who trains patients in the use of their visual aids, her role is actually an extension of this function into the community. With her recruitment, the Royal Blind Society has finally been able to achieve the primary goal of its Low Vision Clinic which was set out in July, 1975:

" ..... to complement the existing low vision clinics which are at Sydney Eye Hospital and at the School of Optometry, University of N.S.W., Kensington, and in particular to allow follow-up of re-assessment of the efficacy of visual aids with severely visually

handicapped clients in the work environment or in a training environment."

#### Funding

The RBS Clinic was initially equipped through the generosity of the Lions-2UW Blind Appeal. It receives no direct funding to cover operational costs.

Clients usually pay for their visual aids unless they qualify for relief through the Department of Youth and Community Services. This is in line with general RBS policy regarding the supply of aids and equipment.

Clients who are not privately insured or otherwise covered also pay for their ophthalmological consultation. In point of fact, however, since most clients receive pension benefits, the ophthalmologist is usually able to bulk bill for his services.

The Royal Blind Society is extremely grateful to the University of New South Wales for providing all optometrical staff and also to OPSM Pty. Ltd. for the services of an optical dispenser.

## DELIVERY OF SERVICES : ASSOCIATION FOR THE BLIND LOW VISION CLINIC

Margaret Lawrence

The Low Vision Clinic at Kooyong is a conjoint effort between the Association for the Blind, the Department of Ophthalmology and the Department of Optometry, University of Melbourne.

It is my task to convey to you, in a very short time, how we in the Low Vision Clinic at Kooyong assist people who are referred to us as patients. Very broadly, these are people whose visual impairment is severe enough to interfere with their daily life.

Low vision is a very descriptive term: the word "low" distinguishes it from normal vision; the word "vision" distinguishes it from blindness. These categories can be further divided into normal and near normal, moderate and severe low vision, moderate, severe and total blindness, reinforcing that there are many degrees of visual impairment.

The transition is often a gradual one and patients, being individuals, will have varying and individual needs which can be met in different ways.

## Philosophy and Aims

Our philosophy, in the Low Vision Clinic at Kooyong, is to endeavour to assist our patients to reach a level of functioning which is satisfactory to them.

The original two-fold basic aim of the clinic still stands:



- to carry out a full evaluation of the patient's visual functioning;
- to prescribe appropriate aids, whether optical or non-optical, with instruction and follow up.

This is achieved by a group of professionals from several disciplines, working in cooperation, to maximize the use of the patients' residual vision and to assist them to compensate for their visual loss in other ways.

The development of an effective team is not achieved easily or quickly, but requires constant working at relationships. I believe team work is communication and recognition of the equality of other members and it is important for each member of the team to be aware of his or her role in providing for the welfare of the patient.

Our team consists of:

- administrator;
- clinic sister;
- patient coordinator;
- referral officer;
- reception and records staff;
- ophthalmologists (sessional);
- optometrists (sessional);
- orientation and mobility instructor;
- occupational therapist;
- social worker;
- volunteers.

The services provided by these members are coordinated around the patient.

There is not time for me to describe each team member's role, but I will detail some roles later to provide as clear a picture as possible of the delivery of our services.

Generally speaking, a person attending the Low Vision Clinic for the first time is greatly concerned about his visit to yet somewhere else and about seeing more specialists. We are concerned in providing an atmosphere which will put the patient at ease and lessen any apprehension.

Can you capture this with me? The setting is non-clinical. The approach at the reception desk is a relaxed and friendly one. The convivial atmosphere in the open waiting room is reinforced by the volunteers who regularly provide tea or coffee to waiting patients. These things are vitally important in putting the patient at ease and in lessening his concern. At all times the patient is presented with a very positive approach to his residual vision. The patient's expectations and needs have to be established before the relatively straightforward exercise in providing services can be undertaken.

On the patient's first visit, an informal interview takes place with that patient's coordinator, who explains exactly what the patient is to expect on this and subsequent visits, for example, length of visit, who the patient will be seeing, etc. After discussions concerning the medical, social, vocational and personal aspects of his life, the coordinator is able to establish a patient profile which includes:

- . knowledge and understanding of visual loss;
- . level of functioning;
- . expectations and attitudes, especially towards visual loss;
- . needs for any other assistance from the multidisciplinary team;
- . self-image.

The patient is advised to bring, on his next visit, spectacles, aids or specific reading material such as current school books, computer print outs, music, journals, etc. - whatever is appropriate. If the patient's expectations appear unrealistic then it is important to begin the often difficult task of bringing him to a more realistic outlook.

This, then, is the overview of the patient's expectations, needs and concerns. I believe that it is important that this patient profile is determined by a member of the team who is not directly involved in providing a specific service.

Professor Ian Bailey, at Berkley University, California, says that in the early days of our Low Vision Clinic, when he was doing both the assessment and the optometric examination himself, he felt he was doing a first-rate job in determining needs and referring for orientation and mobility and occupational therapy assistance. However, when this was done by someone else, he realized and admits freely, that he was unable to be as objective as an outsider. The simple reason was that he was too highly involved from the optometric point of view.

There are other aspects of the coordinator's role, which include:

- . ensuring that fields of vision are recorded;
- . coordinating the patient's visits;
- . establishing a firm relationship with the patient so that he knows he has a point of contact at all times;
- . follow-up, generally by telephone, in the correct use of aids and reinforcing the instructions given by the optometrist.

The introduction of the coordinator into our team has clearly shown that there is less confusion in the patient's mind about whom to contact should he wish to further discuss any matter.

Following the initial interview, the assessment of the patient's visual functioning is carried out by the eye care professionals.

The ophthalmologist's role within the clinic team is to:

- . explain to the patient the exact cause of the visual loss and expected progression of the disease process;
- . refer any active pathology for treatment;
- . ensure that all medical/surgical potentials have been evaluated;
- . be available to answer any questions the patient may ask concerning his visual disease or status.

The visiting consultants are aware that no treatment for any eye disease can be carried out. To the patient, the most important aspect of diagnosis is its ultimate effect on his vision. Accurate diagnosis is the key to assessment of function and meaningful counselling. For children with low vision, an accurate diagnosis is of great importance, for this can affect plans for their future education and vocation.

On the second visit, usually the same day of the following week, or on consecutive days for country or interstate people, the patient is seen by the optometrist. The optometrist's examination includes a careful refraction and evaluation of optical aids which are best suited to meet the particular defects and demands of the patient's daily activities.

It is not only a question of fitting and dispensing the best possible aids. There still remains an important task: to teach the patient how to use the given devices and to explain their limitations, the new conditions for near vision, monocularity, close working distances, illumination, etc.

The optometrist has neither the time, nor perhaps the necessary skills, to follow the patient into his home, work area or classroom. It is at this point then that other members of the team can assist, including occupational therapist, orientation and mobility instructor, social worker and patient coordinator.

Communication is a vital aspect in achieving optimum provision of service. On a day to day basis, there is opportunity to discuss individual patient management. To enable team members to share their concern about difficult patients and draw from each other's experience, time has been set aside for team meetings.

This is not all that needs to be said about providing a low vision service. Often the patient has very real personal concerns related to his visual impairment and has been unable to verbalize these feelings. Because of the complexity of our human make-up, the effects of a visual loss are evident in countless ways and we need to be very aware of these effects. Let me illustrate with these patients ...

Mr. A., a widower in his late seventies with early disciform macular degeneration, when referred to the Low Vision Clinic had already been advised, three months previously, that his vision was below the legal limit to drive a car. He was able to be assisted to read easily using spectacles and magnifiers. Although Mr. A. was convinced that his vision was deteriorating rapidly because of cataracts, he was openly adamant about continuing to drive.

To accept his visual loss and give up driving would mean a shattering of his self-image. His friends would know and, in addition, there would be great restrictions to his social activities and isolation. He could see what was the sensible thing to do, but was still grappling with the effects not driving would have on his life style.



Mrs. B., sixty years, suffering from familial choroidal atrophy, separated and now living alone, first attended the Low Vision Clinic two years ago. This was some months after she was referred by her own ophthalmologist because she would not accept appointments and did not want anyone to know she was coming. When she did attend she was very anxious to get away quickly at each visit.

Her financial security depended upon her maintaining her job for another twelve months and she was battling against deteriorating vision. She had the added apprehension of secretly attending the Low Vision Clinic. We could only help her minimally at this stage, but twelve months later, when she was not under the same stresses, considerable assistance was given by the optometrist, occupational therapist and social worker. Her financial situation which was basic to life was resolved and she had come to terms with her own situation.

Mr. C., from interstate, was referred to the Low Vision Clinic when he was thirty-nine years of age. He has retinitis pigmentosa and has been under ophthalmological care for twenty-five years. He is a school teacher and his greatest difficulty was in reading. There was non-acceptance of any help right from his initial visit, even though significant improvement could be achieved with high addition spectacles. Similarly, in the area of occupational therapy and orientation and mobility he declined assistance.

His vision has deteriorated further and he has returned for review appointments on a regular basis. He continues to resist the use of obviously different aids, for example, he was delighted to find that a contact lens could improve his vision without his students' knowledge. His non-accepting attitude is now placing stress on all members of his family, as he now relies on his teenage daughter to act as a sighted guide in unfamiliar surroundings.

Low vision care is far more than assessment of vision, prescription and instruction in the use of appropriate aids.

## Referrals to the Low Vision Clinic

It is interesting to us, now in the ninth year of operation of the clinic, that although our policy in accepting referrals from any source has not changed, the highest percentage of referrals is now coming directly from ophthalmologists, who are becoming more aware of what low vision services are all about. The remainder of referrals come from different sources and these percentages have remained fairly stable.

	1976	1979
Ophthalmologists)	31%	46%
Eye Hospital )		
Victorian College of		
Optometry	6%	5%
Association for the Blind	18%	16%
Other Agencies	16%	11%
Self-referred	28%	22%

Table 1. Referrals

Patients who are referred direct from their ophthalmologist or optometrist are accepted at their specialist's request. When a person is self-referred he is encouraged to discuss the appropriateness of attending with his specialist, who can then refer direct to the Low Vision Clinic.

Until January of this year, the Australian Government accepted the major responsibility for funding the service through a Health Programme Grant. However, the cost of providing paramedical services (occupational therapist, social worker and orientation and mobility instructor), has never been covered. We have now been directed by the Department of Health to charge those patients who are privately insured. This immediately introduces discrimination and is alien to our policy of treating all patients as individuals and in a similar manner. It is obvious to us that patients are aware that there are differences.

The services we now provide at the Low Vision Clinic at Kooyong have evolved from eight years of growth and development. Our service would be classified as falling within the highly specialized total care unit at the top of the three tiered structure of total care, regional service and private practitioners. This structure was recommended by the working party set up by the Australian National Council of and for the Blind to investigate the provision of low vision services.

We believe that the Low Vision Clinic at Kooyong is a working example of the theoretical concept of a multidisciplinary team. To carry out our philosophy and reach our aims can only be achieved by this multidisciplinary team approach.

## LOW VISION CARE CENTRE, QUEENSLAND

Joy Grice and Greg Fanning

## An Overview: Joy Grice

The delivery of low vision services in Queensland has only recently evolved into the Low Vision Care Centre and to look at the newly evolving method of delivery, we need to go back to June, 1979, when a working seminar was held to bring together the people who were interested in providing services to Queenslanders with severe visual handicaps. At this seminar, no less than nineteen people gave short summaries of services already being supplied. There were already three low vision clinics in Brisbane, one of which was for children.

I offered at that seminar to start a low vision service that would attempt to coordinate the services already given, to expand those services where needed and to attempt to minimize overlap. The Department of Veterans' Affairs allowed me to close the Low Vision Clinic we already had within the Department and gave full departmental support to the new independent Low Vision Care Service. Without the admirable assistance from the Department and especially from our Deputy Commissioner, Mr. Allan Gray, we would have had no chance of starting such a broadly based service and I believe the extent of the cooperation from Commonwealth and State departments, private agencies and private individuals is unique in Queensland. We're very proud of what is developing, especially at a time when resources of finance and staff are already stretched.

We use the facilities of the Eye Clinic at the Department of Veterans' Affairs hospital at Greenslopes to see patients every Tuesday afternoon and we have now seen our first one hundred patients. We started on Tuesday afternoon, August 21, 1979. Patients are referred from private ophthalmologists, optometrists and from hospitals. We adopted the name "Low Vision Care Centre" to avoid confusion with the



Department of Veterans' Affairs previous Low Vision Clinic and because we felt the title was a more accurate description of the service we planned.

The present team of people involved in the centre is as follows: an administrator and secretary/receptionist from the Department of Veterans' Affairs, an ophthalmologist in private practice, two optometrists in private practice, two social workers from the Department of Welfare Services, a community health nurse from the Department of Community Health, a clinic sister in private practice, two occupational therapists from the Department of Veterans' Affairs, an orientation and mobility instructor from the Royal Guide Dogs for the Blind Association of Queensland and an optical dispenser from Optical Products.

These various departments and agencies have cooperated in allowing the use of the services of their full-time employees each Tuesday afternoon and in addition, the Department of Veterans' Affairs pays for the services of the ophthalmologist and optometrists on a sessional basis.

Patients have an initial interview with our community health nurse or social worker. They are then seen by our ophthalmologist for a full clinical assessment and referred for optometrical assessment as necessary. The social worker from the Department of Welfare Services has shared the initial interviewing in this early developing phase to help us steer the service in the right direction; she probably had the widest experience in this field as she was the social worker for the visually impaired with the State Department of Welfare Services.

The services of our occupational therapists, orientation and mobility instructor and social workers can be requested by any member of the centre staff. If special training in the use of an aid is required, our occupational therapists or orientation and mobility instructor can give this training. Home visits are also arranged.

If an optical aid is ordered, the order is processed by our optical fitter and sent to one of the optical laboratories. The patients



pay for their own optical aids. There are also other aids available through the centre and again, these are paid for by the patient. All the services are supplied free, but none of the appliances. We have no outside funding at present and can only exist because of the services donated as above and also through donations from Lions International and from individual donations.

Comments from staff, from the referring doctors and from patients indicate a high degree of satisfaction with the services supplied from the centre. Obviously it's early days yet, but with the cooperation of the Department and staff involved, I do not think it is exaggerating to say that everything augers well for the successful establishment of a highly desirable and much needed service.

We tried initially to have all the staff visit the Low Vision Clinic here at Kooyong so that we all had similar ideas of what existing low vision clinics were all about, but we have tried to gauge the local needs and to meet these needs rather than stay with any particular model from elsewhere. One area where we are finding unexpected demands for staff time is in the time consuming training of eccentric viewing techniques. I've asked one of our optometrists, Mr. Fanning, to enlarge on what we are doing in this area to give you some idea of one developing area where need for staff time had to be met.

#### Eccentric Viewing Technique: Greg Fanning

The comprehensive nature of low vision care services at the Low Vision Care Centre has since its inception, resulted in a small but continuing flow of previously successfully treated, but currently non-achieving, reading motivated senile macular degeneration patients from private and other low vision services. If we can comment on our efforts to get them to read, our initial findings were:

- inability to read the Logmar card with the predicted power;

- negative improvement with conservative magnification increments;
- negative improvement with considerable increments of illumination.

Stimulated by a report by Lederer on eccentric viewing techniques applied to distance in 1978, we have applied eccentric viewing techniques to the reading task in the following fashion.

In the first instance, a preliminary fundal and field examination is conducted by Dr. Harrison, the ophthalmologist. At a later visit, I assess the best corrected vision, the size of any scotoma apparent with the Amsler Chart and generally choose to treat the eye with the smaller scotoma, irrespective of visual acuity. From the literature, it is apparent that the acuity level achieved with the peripheral retina depends, amongst other things, on the choice of target (Hess et al.) and previous experience (Flom, Weymouth, LeGrand, Sangstad et al, Millodot and Lamont). Flom and Weymouth cite a declining visual acuity with retinal eccentricity of 1.78 mins./degrees for *untrained* subjects, and 0.37 mins./degree for *trained* subjects.

Our patient numbers are small and I suppose the approach is arbitrary, but in the absence of other guidelines our visual acuity predictions are based from the Amsler on 1.78/degree, and a starting power determined using Bailey's formula of  $F = \frac{4S}{3N}$  (where F is the required lens power, S denotes the bottom half of the Snellen fraction when the top half is 6, and N is the points in size to be read.  $M = 5/3N$  [M25 understood]).

Correction is monocular. Initially, with central fixation, the patient sees an unintelligible blur. If using the right eye the patient is usually asked to look to the right of the word he wishes to see, thereby shifting the central scotoma and the physiological blind spot out of the road. At this point, with effort, occasional letters are seen making up the word. The word cannot be seen in entirety, but has to be deduced by reading with difficulty one letter at a time. However, we are finding, from an unsteady start, with time and improved eye movement control, fluency is usually achieved. Most

require high levels of illumination and for some, running a pencil torch under the line of print not only achieves this but produces a kind of illumination aperture which also possibly may relieve contour interaction effects.

We have applied the technique to patients with corrected acuity levels ranging from 6/30 to 6/150, with success varying from improved reading fluency with conventional low vision aids through to our best result where a patient with 6/150 is reading newsprint with only a ten diopetre addition.

Conclusion: Joy Grice

Apart from the need to have staff to help to teach the use of an aid, we now have this need for staff to help teach a technique.

At the June seminar, Dr. Bruce Ford spoke of the need to fit any service to the needs of the local community and to do this we are still experimenting with different methods. For example, some of our initial interviews - where there was a special need - have been done in the patient's own home.

I think it would be true to say that the delivery of services through the Low Vision Care Centre is still evolving and the present type of delivery may well be modified if more formal auditing of our results shows the need for change. We are constantly monitoring our efforts and changing our methods as we expand the services, but thorough evaluation of the effectiveness of the delivery will have to wait until finances are available.

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## LOW VISION SERVICES IN SOUTH AUSTRALIA

Kevin Rooney

## History

Prior to 1978, low vision services in South Australia were provided in a fragmented manner by ophthalmologists and optometrists who took particular interest in this area of practice. Amongst these practitioners, there was an awareness of associated agencies, though not universally appreciated within the professions.

Following discussions between interested members of these two professions, the concept of a low vision clinic was discussed as early as 1976. Formal application was made to the Federal Department of Health for funding of the clinic and this was forthcoming under a Health Programme Grant.

In particular Mr. Peter Thomson, Dr. Norman Wicks, Mr. Dave Morrison and Mr. John Rogers, members of the Board of Management, were largely responsible for the successful fruition of the Adelaide Low Vision Clinic. (See Table 1, p.144).

A Board of Management was formed and the State Department of Health was requested to assist in providing suitable premises. The premises selected have proven excellent in location and facilities. The clinic is situated in a major city office building with easy access to parking and public transport. After some delay, the doors were opened to a fully equipped low vision clinic, fitted for ophthalmological and optometric consultations, in July, 1978.

Initially the Low Vision Clinic was administered by the State Branch of the Australian National Council of and for the Blind. However, later in 1978, the Royal Society for the Blind of South Australia



assumed administrative responsibility.

### Clinic Procedures

Referrals to the Adelaide Low Vision Clinic are through ophthalmic practitioners in the State. All patients are then seen in the following sequence:

#### Initial Interview

The first contact that a patient has with the clinic is at the interview conducted by the clinic sister. A comprehensive history is taken in a sympathetic manner. The patient's needs, desires and motivation are determined. The format of the history is that used at the Kooyong Low Vision Clinic and has proven most satisfactory.

#### Ophthalmological Examination

Next a patient is seen by the clinic ophthalmologist who determines:

- the exact cause of visual loss;
- advises the patient of the expected progress of the disease process;
- refers active pathology for treatment;
- assures that all medical potentials have been evaluated.

## Optometric Examination

An appointment is then made on another day for the patient to be seen by the clinic optometrist. At this visit, following careful refraction and assessment of all current aids, the patient is introduced to the wide range of aids available at the clinic.

Those aids which yield maximum benefit for near tasks, distance viewing and often intermediate tasks are selected.

The patient is then given instruction in the use of aids by the optometrist and the aids are loaned for trial in the patient's daily living environment. Aids are generally loaned for two to four weeks, after which the patient returns for review. Successful aids are then purchased at cost price plus a small handling charge. If not successful, the aids are returned at the review visit and perhaps alternatives are suggested.

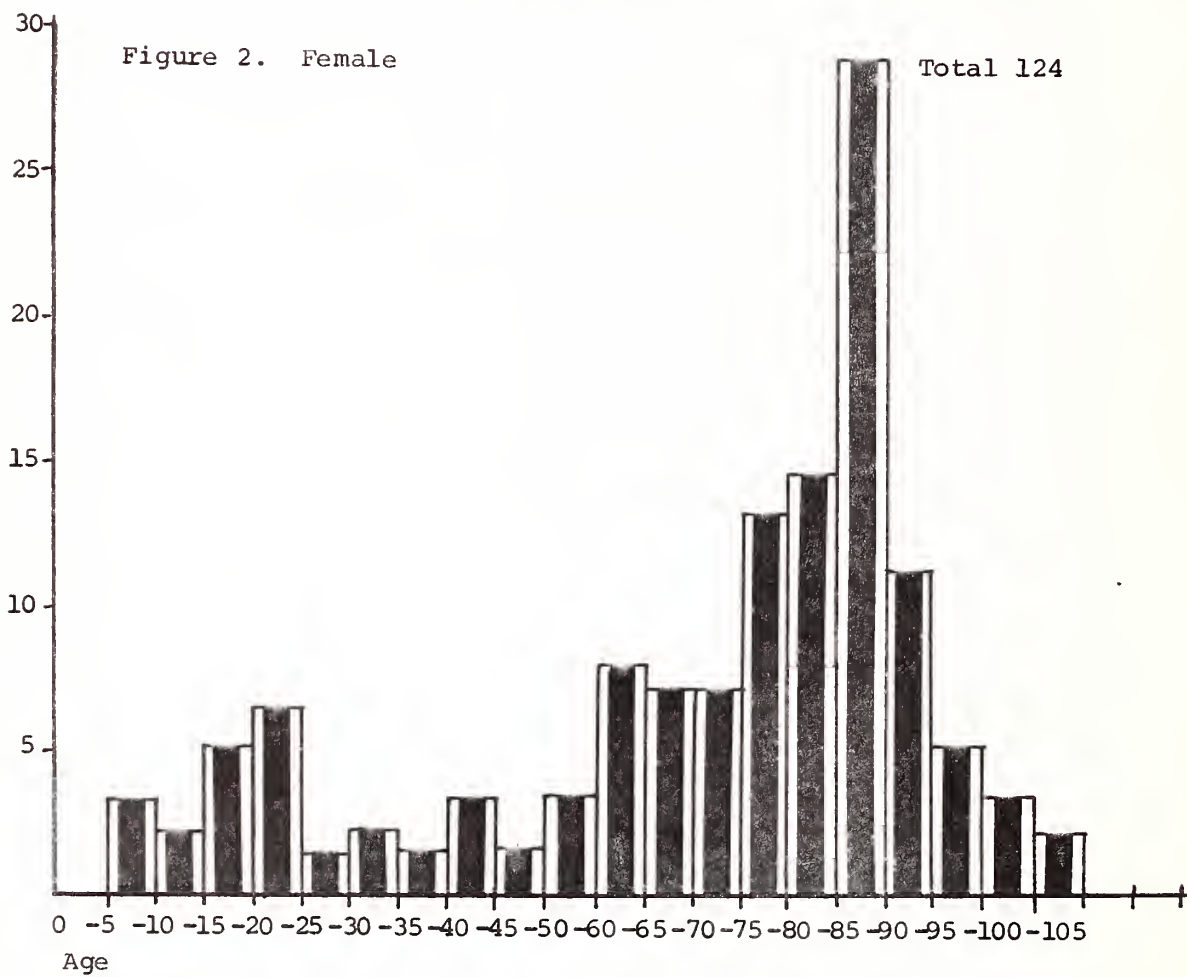
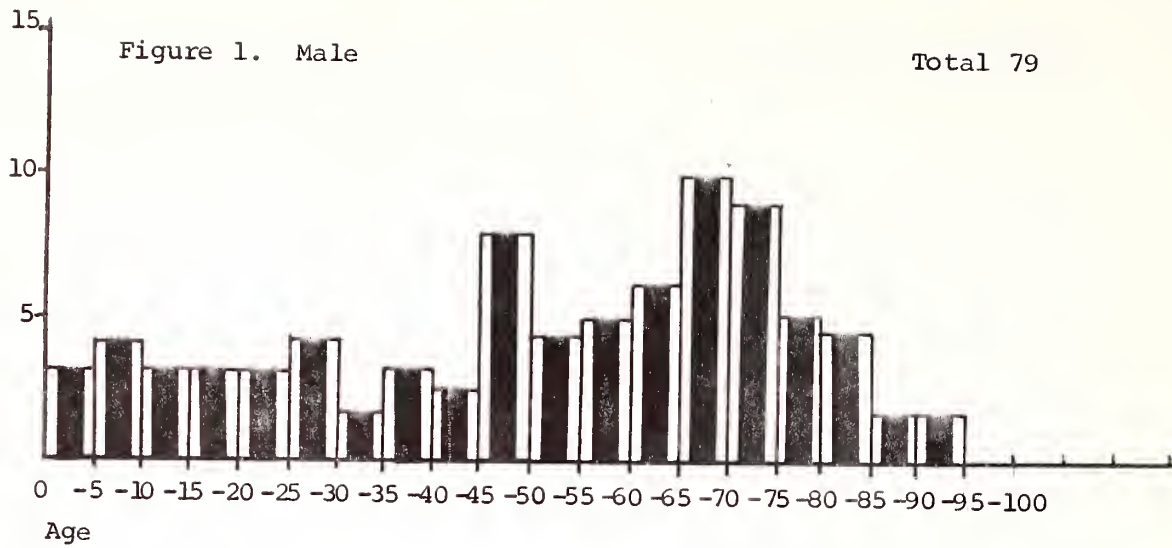
At all stages of the low vision examination, the clinic assumes the responsibility of informing the patient of the availability of other services of existing agencies and I am happy to report that a close working relationship exists between these agencies and the clinic. (See Table 2, p.144).

## Data

A study of the first consecutive 200 patients seen at the Adelaide Low Vision Clinic confirms the trends seen in similar studies of low vision clinic populations: (See Figures 1 and 2, p.139).

- . the large proportion of elderly patients;
- . the preponderance of elderly females.

This is reflected in the analysis of the primary causes of visual loss. (See Figure 3, p.146).



AGE-GROUP	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50	-55	-60	-65	-70	-75	-80	-85	-90	-95	-100	-105	TOTAL
FEMALE	1	6	6	8	9	4	6	2	6	3	11	12	12	13	23	23	32	14	6	4	2	124
MALE	0	3	2	5	6	1	2	1	3	1	3	8	7	7	13	14	27	11	5	3	2	79

Figures 1 & 2: Adelaide Low Vision Clinic Patients

The major cause of visual loss is senile macular degeneration, which has been seen in one-third of the patients as the primary cause. This has implications for the manner in which low vision services must be oriented and I shall discuss these shortly.

Of the 200 patients seen at the clinic, a total of 203 aids were supplied. (See Figure 4, p.141). The majority of these were spectacle mounted devices, such as high addition reading lenses and bifocals, including the South Australian designed Sola L.V.A. Mini-binoculars (6 x 15) and Peake Loupes were the other most frequently prescribed aids.

#### Consumer Survey

A survey of patients seen at the clinic was reported in the Australian Journal of Optometry in September, 1979. Patients were contacted by the author, Julian Walsh, and indicated, via questionnaire, their subjective appreciation of the value of the services of the clinic. (See Table 3, p.145). He reported: "The overall response to the survey indicates a generally high level of consumer satisfaction. Most individuals commented favourably on the relaxed atmosphere of the clinic, the amount of time available to each person to discuss individual problems and to prescribe appropriate aids."

#### Low Vision Discussion Groups

One outcome of this survey was the formation of low vision discussion groups. The response to these has been enthusiastic. A social worker acts as chairperson to a group of six or so visually impaired persons, each of whom is accompanied by their spouse or friend or family member. At each meeting a member of the low vision clinic team is invited to participate in discussion. The discussion

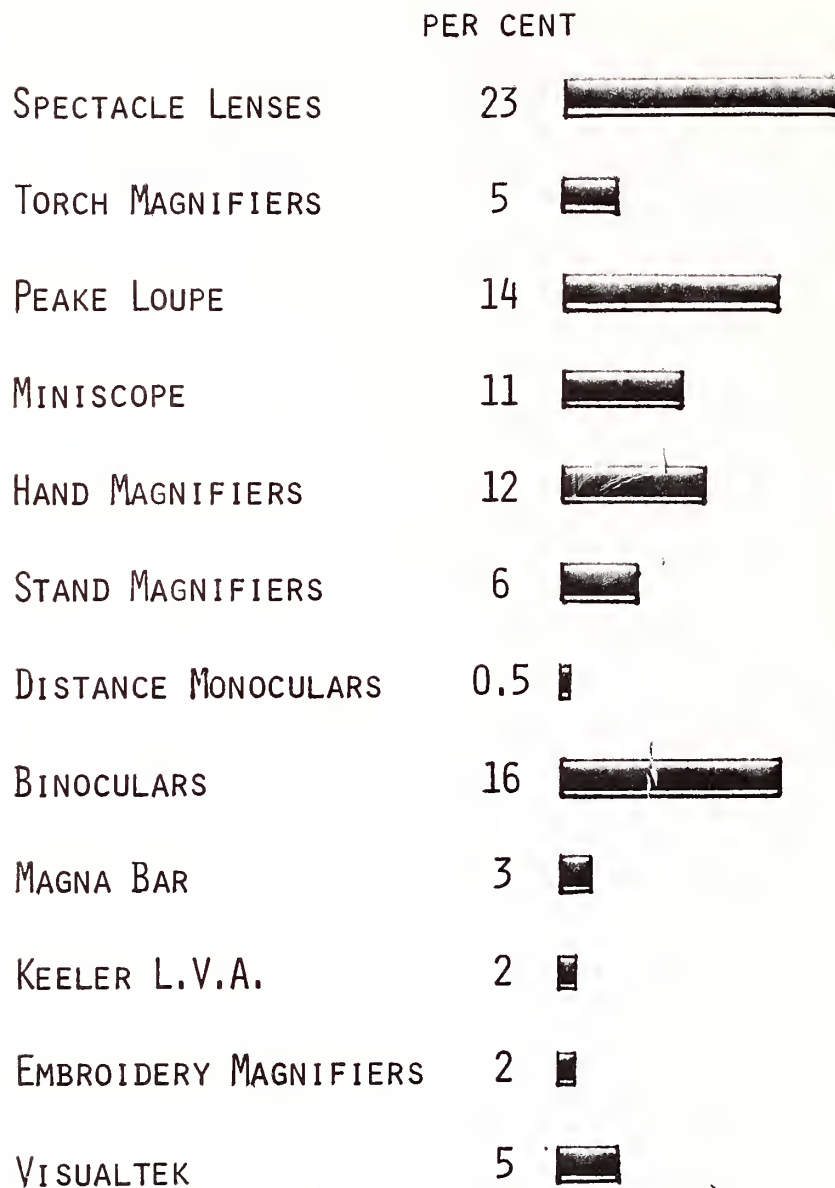


Figure 4: Aids Prescribed



is informal and questions flow easily. Participants of these groups have appreciated sharing their experiences with other persons similarly incapacitated and enjoyed the casualness of informed discussion outside the clinic setting. (See Workshop Paper, p.441).

#### Home Visits

We are currently initiating a pilot programme whereby an assessment of patients is conducted at their home or working environment prior to their visit to the clinic. Particular attention will be paid to assessing:

- . lighting requirements;
- . desires of the patient to perform particular tasks;
- . mobility requirements;
- . social requirements.

Thus, obstacles which may prevent the successful adaptation to various aids would be identified and hopefully eliminated. Expectations of low vision aids would be made more realistic and closely identified with specific requirements.

#### Conclusion

The continued success of the Adelaide Low Vision Clinic, as with any low vision clinic, will depend on how well it meets the needs of its patients. We are required to be responsive to their special and often very individual needs. This requires flexibility of low vision care.

We should be aware that a large proportion of patients will be elderly. In this age group, assistance can often be given at a practical level, with special attention to lighting and daily living requirements.

In South Australia we expect a 23% increase of aged over 65 years by the year 2000. (See Table 4, p.145 and Table 5, p.146). Accordingly, it is likely that the services of the low vision clinic will be required to match this increase of its primary age groups.

That the low vision clinic is the most effective method of providing low vision services has now been established. However, we do need to be aware of the need for review and assessment to ensure that the services offered through the clinic setting are meeting the needs of the low vision population.

Royal Society for the Blind

Australian National Council of and for the Blind

Royal Australian College of Ophthalmologists

Australian Optometrical Association

Clinic Sister

Table 1: Board of Management of the Adelaide Low Vision Clinic

Royal Society for the Blind

Royal Guide Dogs for the Blind

Blind Welfare Association

Vocational Officer of Commonwealth Employment Service

Elderly Trust of South Australia

Domiciliary Care

Low Vision Discussion Group

Table 2: Referral to Other Services

Patients Prescribed Aids	Patients description of aids
44	23 very useful 9 moderately useful 9 some use 3 no use (aids returned)

Table 3: Consumer Survey

	65+		
M	50,600	=	7.87%
	642,500		
F	71,600	=	11.1%
	645,600		
T	122,200	=	9.5%
	1,288,100		

Table 4: Population of South Australia - 1978

65+

M	74,444	=	9.7%
	768,485		

F	106,618	=	13.6%
	782,000		

T	181,062	=	11.7%
	1,550,485		

Table 5: Population of South Australia - 2001

	Per Cent
SMD	35
Cataract	5
Glaucoma	3
Myopia	4
Diabetic Retinopathy	6
Vascular Retinopathy	11
Retinal Detachment	1
Uveitis	0.5
Trachoma 7/8 Corneal	3
Retinitis Pigmentosa	6
Congenital Macula Defects	4
Optic Atrophy	8
Nystagmus 7/8 Birth Defect	8
Others	5

Figure 3: Primary Cause of Visual Impairment



## LOW VISION SERVICES IN NEW ZEALAND

Geoff F. Gibbs

In assuming that the needs of the individual with low vision are threefold, it is my opinion that present services to this population are less than satisfactory in New Zealand.

I base this statement of Dr. Eleanor Faye's premise that no low vision service should be considered comprehensive unless the following areas of need are met at a professional level; firstly, the need for detection of eye disease as well as medical-ophthalmological services for the prevention and, where necessary, treatment of eye diseases; secondly, the need for optical services; and thirdly, the need for psycho-social services, education and rehabilitation.

It must be remembered though, that low vision work in New Zealand is still in its infancy and clinics have only been established over the last five years.

In August, 1975, a conference on low vision was sponsored in Auckland by the Royal New Zealand Foundation for the Blind. Dr. Alfred Rosenbloom, President of the Illinois College of Optometry was the principal speaker. Assisting him were New Zealand notables such as Dr. Richard Clemett (Senior Lecturer in Ophthalmology Clinical School, Christchurch), Dr. Calvin Ring (Ophthalmologist, Auckland), Mr. P. Skeates (Senior Lecturer in Optometry, University of Auckland), Mr. D.A.R. McKay (Ophthalmologist, Auckland), Mr. Peter Turner (Optometrist, Wellington) and Mr. A.H.T. Rose (Optometrist, Christchurch).

This same group, with the addition of other parties in attendance at that first gathering, has continued to provide professional leadership in the field. There are now low vision clinics in Auckland, the unit at Homai College being administered and funded

by the Royal New Zealand Foundation for the Blind. At Palmerston North, an autonomous clinic operates within the framework of the Eye Department at Palmerston North Hospital. Staff and equipment are all provided by the Hospital Board, with full use being made of the facilities available to the general Eye Clinic as well as the specialized equipment required for low vision assessment. A private system has been operating in Christchurch for quite a considerable period of time over and above that stated here, but a pilot scheme, also as part of the New Zealand hospital service, commenced in that city during 1975. In Dunedin the situation is again similar and as I understand it, a clinic is about to be established in Masterton and possibly Whangarei. Several private clinics are in evidence in centres of lesser population.

This group of professional people who have concerned themselves with low vision care have met on one occasion since the establishment of the four major clinics and a good level of cooperation exists. However, there is a need for more centres throughout the country to serve large areas which have no low vision resources, or there is a need for greater communication with existing centres so that suitable patients can benefit from their facilities. However, if the latter were to be so, the clinic sessions in the centres already operating would have to be greatly increased, and there would also be the problem of patients being forced to travel considerable distances. It would, therefore, appear better to set up further centres in strategically placed areas, so that no patient has to travel an unreasonable distance to reach a clinic.

To return to the original line of thought, it can be stated without contradiction that prevention and treatment of eye diseases in New Zealand is of a high standard. However, it is of concern to my organization that a geographically isolated area such as the west coast of the South Island has no resident ophthalmologist, the same applying to the Southland Hospital Board area, which many would say is comparatively accessible.

The second area of need is that of optical services, that is, the need to provide the best possible refraction, to provide expert

advice on lenses, magnifiers and telescopic devices. Good service is provided in this area by both ophthalmologists and optometrists, although there are pockets of population who again tend to "miss out."

With regard to the specialized work of recognized low vision clinics, each patient, for obvious reasons, must be referred by his or her own ophthalmologist, together with an up-to-date ophthalmic assessment and refraction. This procedure ensures that only suitable patients are referred to the clinic and also that their ophthalmic state has received any treatment necessary prior to referral.

Inadequacy in this system could be said to exist if patients who could be helped by low vision care are, for some reason, not referred to the clinic by their ophthalmologist. It is, for example, certain that many patients who have been registered with my own organization, the Royal New Zealand Foundation for the Blind, have "accepted" their blindness and no longer visit an ophthalmologist, thus effectively being denied access to a service which could conceivably help.

A system of registration review is currently being explored to combat this difficulty. The same, of course, could apply to others with a less severe visual handicap who may not be registerable. Many of this group, too, no longer visit an ophthalmologist and, therefore, they will also be denied access to clinic facilities.

Further publicity on the activities of low vision clinics appears essential, although the present level of cooperation from members of the Ophthalmic Society of New Zealand is heartening.

A further difficulty brought about by New Zealand's geographical isolation is the need for professional persons concerned with low vision to make regular visits overseas to acquaint New Zealand clinics with new and improved aids which are being produced. I see the necessity to have the knowledge to review existing and future services to meet changing circumstances as critical. Unfortunately, at present most information comes to us by way of

relevant optical firms and too often the representatives of optical companies are not aware of developments in low vision equipment. A number of people in the field share this concern and it appears that reports on individual visits and findings may soon be pooled.

Persons with low vision need help and instruction in how to utilize their remaining vision most effectively and it is attention to these special needs that sets low vision services apart from more routine eye care. Traditionally neither ophthalmologists nor optometrists have been trained in this area. The patients' needs, therefore, are best met if low vision services are provided by a team that involves, in addition to the eye care specialist, well-trained support personnel with expertise in the area of low vision. Adequate support and aftercare service is provided to patients of the Homai Clinic, as the resources of the Royal New Zealand Foundation for the Blind rehabilitation and welfare services can be brought into play. The clinics attached to Hospital Boards have access to the hospital occupational therapy department in certain specific cases, although this has been done very rarely. Use of the hospital social workers is also possible in certain circumstances. In respect of the required follow-up to private clinic patients, the responsibility is that of the ophthalmologist/optometrist alone.

A paper by Dr. Lesley Boulton of the Palmerston North Low Vision Clinic, published in the Transactions of the Ophthalmic Society of New Zealand, Volume 31, 1979, shows that of patients referred with corrected vision of better than 6/60, 89% benefitted from aids. In those patients with corrected vision of 6/60 or less, and thus eligible for blind registration, 82% could be helped by aids. These latter figures were broken down into two further categories, namely, those with 3/60 to 1/60 vision in which 58% obtained either newsprint or ability to read large print books, 8.5% failed due to lack of motivation rather than due to visual causes and 33.5% failed completely. Of patients seen with visual acuity of 1/60 or less, newsprint or large print books were obtained in 63%, 9% failed due to lack of motivation and 28% failed completely.



The clinic has been running for a further year since this article appeared and statistics may have changed a little since then, but this is the most up-to-date commentary currently available.

As a final observation, low vision population statistics in New Zealand should be undertaken to ensure that all people who could benefit from low vision services are in fact being reached. At present, one feels that only the tip of the iceberg is being seen. Perhaps low vision services within New Zealand today are best described as having a uniformity of purpose, but not of approach. Clinics have become established on the basis of the individual interest taken by certain professional persons and each has negotiated its own set of systems and procedures with agency or Hospital Board. As a result, financial assistance over the entire range of aids differs markedly from clinic to clinic.

Unfortunately, the New Zealand Government's Department of Health has been extremely slow in recognizing this speciality as an area of need. It has now been made clear to that Department that an estimated 1% of New Zealand's three million population could have a low vision problem and at last there are signs of action.

In mid 1979, the National Civilian Rehabilitation Committee requested detailed information and projections from a wide variety of sources in a study entitled "An Investigation into the Adequacy of Services Available for Persons Suffering from the Handicaps of Low Vision or Blindness." I understand that the raw material was subsequently passed to the National Advisory Council for the Disabled. However, my organization has had no further contact with either committee; in fact I know of few persons who have. Hopefully though, their labours are to lead us to a second stage of development and I will, therefore, await Mr. Peter Turner's paper at tomorrow morning's session with a great deal of interest.



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## COMMUNITY BASED SERVICES IN THE UNITED STATES

Allan N. Freid

As has been previously pointed out, there has been increased interest among professionals in recent years in meeting the needs of the partially sighted. Professional schools have generally increased their emphasis in the specialty area. During the same time, some public agencies have become more cognizant of the needs of the visually impaired and the benefits of low vision care and thus, to some extent, have increased their numbers of referrals. All of these factors, and others, have resulted in some increase in the number of community based services.

Perhaps the most potentially readily available source of low vision services is the private practitioner. I say "potentially" for two reasons. Firstly, the private practitioner is most times the first one to come in contact with the low vision person. Secondly, "potentially", because there is a need for an increase in those especially trained and willing to expend the extra time required to see that the patient is supplied with the services of all members of the rehabilitation team when needed. In order to make the full range of services available to the low vision patient, the private practitioner must seek out the sources of these other services within the community. Unlike the agency based programmes, these other services are not always easy to find and in some areas are not available at all.

Still, there is much to be said for establishing and nourishing private practice low vision care. One of the major problems of the partially sighted is transportation, and many times it is not convenient or possible for the patient to travel to the few agency based clinics that do exist. In addition, most of the agency based clinics that I am familiar with are located in large urban areas, while private practitioners exist in almost every community of any

size throughout the country. Finally, there are some people, especially the elderly, and they make up the vast majority of the partially sighted, who do not feel comfortable in clinic-type surroundings and prefer the warmth of a private office. Any or all of these factors could be the deterrent that prevents individuals from receiving proper care.

Low vision care in private practice is usually administered by the vision care practitioners themselves, sometimes with the help of ancillary office personnel. The true specialist makes arrangements for patients to receive the services he does not supply from other professionals away from his office.

Those practitioners who see a significant number of low vision patients per year usually possess enough of the special equipment needed to carry out proper evaluations. In some cases, where practitioners do not see enough patients to make it economically feasible to maintain the proper equipment, some have pooled their resources and transfer the equipment from office to office as needed.

The availability of non-optical services varies with the community. My community, Santa Clara County, California, is very fortunate. For mobility training and daily living skills, there is a course available at one of the local community colleges. In addition, the State of California Department of Vocational Rehabilitation will supply these services for those of employable age. These services are also available sometimes from a centre for the visually impaired which is located at the northern end of the County.

There are counselling services available from at least one private practice and one agency based psychologist, both of whom have special experience with the visually impaired. Special education help can sometimes be arranged on a private basis with a few of the public school special education teachers. Vocational counselling and training are available from the State Department of Rehabilitation as well as from Goodwill Industries, which is a private, non-profit organization serving all of the handicapped.

Case or social workers, for home counselling and follow-up, are accessible through the County and State public assistance programmes if the patient is eligible. Otherwise, this is a weak point in the system.

I should emphasize that I do not think that the situation which exists in Santa Clara County is widespread throughout the country. But it does exist in many other places and could exist in many more if proper effort were given to establishing these services. As I have said previously, it is part of the responsibility of the low vision specialist to seek out the sources of these non-optical services, and where they do not exist, he should make every effort to initiate them.

Funding, of course, is always a problem for the majority of low vision patients. There are some who still have the resources to pay for the services themselves, especially when they do not require the full range of services. But the ones who are able to finance the full range of services are very small in number. For those patients unable to pay for the needed services, there are at least five sources of funding in California. Some or all of these sources exist also in the other States.

Medicare, which is our national health care programme for the elderly, will pay for low vision optical aids for those who have had cataract surgery. However, they will not pay for the low vision evaluation or any of the other professionals' services. This problem is being addressed by the United States Congress at this time.

Medi-Cal, which is our State public assistance programme, will pay for both optical evaluations and aids, except for telescopes. They will not pay for other services except for some psychological counselling if the bureaucratic red tape can be overcome. Incidentally, there is no red tape in paying for white canes. Apparently they prefer for people to operate like the totally blind.



The State Department of Rehabilitation will pay or furnish almost the entire gamut of low vision rehabilitation services for those of employable age or those who will be of employable age when the services are completed. The State Crippled Childrens' Service is charged with providing services for visually impaired children. However, I know of no confirmed cases where they have paid for low vision services. They seem to be mostly interested in strabismus surgery, even to the partial exclusion of vision training for the condition.

Finally, if none of the other sources is accessible, most practitioners find service clubs, such as Lions International, very interested in helping the visually impaired. It is certainly recommended that any practitioner in the low vision field should develop a good working relationship with the local Lions Clubs.

In some areas, another community based source of low vision care is the professional schools. Although distributed throughout the country, like the blind agencies, they are not available in all communities. All optometry schools and some medical schools offer low vision services on a routine basis. The range and level of services varies greatly from school to school.

One must remember that, from the standpoint of the administrators, the primary purpose of the educational institutions is to train optometrists and physicians in their areas of expertise. The range and level of low vision services, then, are determined by the funds and time allocated to this area of study, as well as the other pressures and responsibilities imposed upon the personnel teaching the courses.

I only know of one optometry school and no medical schools in the United States that offer in house, what I consider to be pretty much the full range of services. The remainder offer lesser care down to optical services only. As far as I know, and I do communicate with most of the teaching personnel on a regular basis, all optometry schools offering less than the full range of services in house do refer patients for other needed services, much like the private practitioner.



In many communities there are also special clinics which offer low vision services and are not connected with blind agencies. One example is the Vision Rehabilitation Center (VRC) of Santa Clara County, San Jose, California. This centre is a non-profit corporation supported entirely at present by donations and monies collected through those on public assistance. This centre serves patients who are unable to pay for the care themselves. It is staffed solely by volunteers, except for a part-time executive director. The staff is presently composed of optometrists, ophthalmologists, psychologists, social workers and special education teachers. Mobility services are presently managed by outside referral.

This type of facility not only serves the patient, but at least in the case of VRC, serves as a source of continuing education for the professionals in the area, as well as a source of education for the community at large relative to the visually impaired. There are quite a few similar clinics scattered throughout the country all operating on their own bases. Many of these clinics, like VRC, are housed in facilities owned and/or operated by Lions International or other service oriented organizations.

ROYAL VICTORIAN EYE AND EAR HOSPITAL:  
LOW VISUAL AID CLINIC

John Colvin

The Royal Victorian Eye and Ear Hospital Low Visual Aid Clinic was commenced in 1968 by Mr. L. Hutton-Jones and in 1973 was taken over by Mr. M. Fish.

To date 2000 patients have been seen. Four patients per session are allocated to the clinic. Bonnal and Mur (in two thousand cases) found the following distribution of causative lesions:

- retina - 54%;
- lens - 28.2%;
- iris - 9.8%;
- visual pathway - 6.0%;
- cornea - 2%;
- vitreous body - 0.05%.

In our series of 2000 cases, 75% would be macular degeneration and 15% are lens problems.

Success with low vision aids depends mainly on:

- age - the younger the patient, the better the success rate;
- motivation;
- site of problem.

Mr. Fish has found that an anterior lesion is more amenable to treatment than a posterior lesion. Anterior lens opacities can be helped more than posterior lens opacities. The latter are on the *nodal point* of the eye and hence much more difficult. Anterior lesions of the retina, that is, cystoid macular oedema, are easier to manage than deeper lesions involving the pigment epithelium, that is, disciform degeneration.

Dr. Eleanor Faye of New York, U.S.A. emphasizes that the type of eye pathological process is of paramount importance in prescribing low vision aids and she divides the ocular problems into three categories:

- no field defect, including conditions which involve the refractive media - corneal scarring, keratoconus, small or enlarged pupils, lens and vitreous opacities. All of these conditions can often be improved by surgery. They are also effectively managed by spectacle or contact lens wear or tinted lenses;
- group with central scotomas. These account for 75% of Dr. Faye's cases and are equal to our own experience. All these patients have macular lesions of some type and their scotoma is reduced by magnification, therefore all types of magnifiers will help;
- the group with peripheral field loss. This is the category most difficult to help. It includes advanced glaucoma, traumatic optic atrophy and retinitis pigmentosa. Functional difficulty starts when central field is down to 10 degrees. These patients often need mobility training as well. It is this group for whom the Low Vision Clinic is most helpful as far as the Royal Victorian Eye and Ear Hospital is concerned.

Our basic low visual aid kit is that provided by Keeler. Our success rate is approximately 50%. When the patient cannot manage with aids available from this source and no further surgical procedure or medical therapy is indicated, then we welcome the expert help available<sup>1</sup> at the Low Vision Clinic at Kooyong.

The Royal Victorian Eye and Ear Hospital does not have the resource personnel available to completely help each patient and the setting up of such a comprehensive facility has proven to be invaluable as far as hospital patients are concerned.

Remote area patients as well are benefitted considerably by a static complex, as it is much easier to bring these patients to one complete clinic than to try and deliver these services over remote areas, such as the 2 million square miles of Australia covered by the Royal Flying Doctor Service.

## DELIVERY OF SERVICES IN PRIVATE PRACTICE

Peter Hardy Smith

I would imagine that very few private ophthalmological practices keep accurate, retrievable records of patients suffering from sufficient visual disability to constitute a significant handicap. My practice is no exception and hence I can present no figures as to the exact proportion of patients suffering from the various forms of pathology sufficient to produce the condition of low vision, as is generally understood. In this discussion I will attempt to indicate the main forms of low vision encountered and what can be done about them using the facilities available in most practices.

There is no doubt that the biggest single group of patients with significant disability is those with the various types of senile macular degeneration. These are due to ageing changes in the retina and are extremely common in their minor degrees in elderly people. The more gross degrees constitute a great burden to those who suffer from them, as they principally affect reading vision, often the sole solace of an elderly person. Macular degeneration may come on slowly and insidiously, or suddenly and catastrophically as when a haemorrhage or exudation occurs at the macula. In many cases the degenerative change is more advanced in one eye than the other, hence a patient may not be significantly visually disadvantaged even though one eye may have very little central vision.

However, the condition ultimately affects both eyes if the patient lives long enough, though in the most disabling type of degeneration, disciform degeneration, the average patient would appear to have a 50% chance of retaining central vision in the second eye over the next five years.

In the less severe forms of macular degeneration, much help can be given by explanation, reassurance and provision of stronger standard type reading glasses. If one eye is much better than the



other, it is often useful to concentrate on that eye with provision of a strong reading lens, rather than trying to correct both eyes up to maximum vision with glasses. The latter procedure may make the patient very uncomfortable as he tries to use the two eyes together, while holding the print very close to obtain maximum image size.

Of considerable importance is the provision of adequate lighting. It is extraordinary how many patients will appear to read well in the consulting rooms, yet complain bitterly once they get home that they cannot see to read even moderate sized print. In my experience this is usually due to inadequate illumination. This is particularly relevant in nursing homes and similar environments, where the only illumination is often a sixty watt globe twelve feet up in the ceiling. A few minutes spent eliciting the conditions in the home environment, often from the daughter or son, will usually lead to this being corrected.

I might add that these remarks also might be well applied to all older people, even those without significant eye disease or with minor degrees of defect. It has been stated that the sixty year old retina receives approximately one-third of the amount of light which reaches the twenty year old retina under equal lighting conditions.

A factor which is often ignored in assessing the vision of older people with macular and other causes of visual reduction is the question of attention span. It is useless to congratulate oneself on getting patients to read the smallest print with a strong lens in the surgery when it is far too much of an effort for them to do this for any extended period at home. This often leads to misunderstandings as to what is and is not possible and it is here that explanation and communication are important.

In my view, the question of motivation is probably the greatest single barrier in helping elderly people to make the maximum use of the vision they have. This applies not only in ordinary practice but also in low vision centres. Often the provision of a simple magnifying glass will satisfy an older person's reading requirements, without resorting to more complicated visual aids which may well be only used once or twice before being abandoned.

I suppose it is fortunate in some ways that senile macular degeneration usually affects people past retiring age. For those where it comes on before this age, the effect can be devastating. Such people in general tend to be better motivated than the older group and this often makes a big difference in their response to the various means of assistance available. These patients also, in my experience, benefit more from the various visual aids available at low vision centres and are often better referred for such help at an earlier stage than the more elderly group.

Unfortunately, as far as actual treatment of senile macular degenerative changes is concerned, this is still very much in the developing stages.

The technique of fluorescein angiography has led to a greater understanding of the various types of degeneration and has been particularly useful in separating the exudative types with fluid leakage from the "dry" types. The procedure of laser coagulation can sometimes be used in exudative types to reduce the accumulation of fluid at the macula and thus delay the onset of severe central visual defect, but this is only a delaying tactic and at the present time there is no true cure for these conditions. Hence there is no immediate prospect of a reduction in the number of people requiring help because of macular degeneration. In fact, with increased ageing of the population, such services are likely to be called upon to an increasing extent.

I cannot leave the subject of senile macular degeneration without pointing out the fact that to many old people, poor reading vision is by no means always their major complaint. Many such people, who have what to a young person would be an unacceptable level of vision, tolerate their disability remarkably well and are unwilling to go to the more extreme and complicated lengths to obtain better vision. This is also frequently noted in the next condition that I shall discuss, namely senile cataract, which appears to be the next most common cause of visual disability encountered in private practice.

In spite of the operation of cataract extraction being one of the safest and least traumatic of all operations, many older people will

simply not take the plunge and have the operation performed. The usual reason given is that they are "too old" or they know someone who had the operation and it was unsuccessful.

There is no doubt that many older people do have surgery and are disappointed in the results, usually because of the problems associated with the wearing of the very thick glasses necessary after the operation. In fact, I have known patients who were almost "visual cripples" because they were completely unable to handle the distortions and aberrations inherent in even the modern type of cataract glasses. These effects take three forms: firstly, the peripheral distortions induced by the curvature of these strong lenses, making straight objects appear curved; secondly, the ring scotoma or blind spot induced by the optics of the lenses, making objects appear to come and go in the peripheral field (the jack-in-the-box effect) and thirdly, the magnification induced by the optics of the system. The latter may be a positive advantage in patients with macular degeneration but the two former effects may be quite distressing, especially when the patient walks around wearing these glasses.

Much of the ability to overcome these defects depends on the motivation of the patient and his understanding before surgery as to the different type of vision that he will have after the operation. Time and patience will often overcome these problems, but new hope can be given to many patients by the newer types of extended wear contact lenses or the implantation of an artificial lens into the eye. Both these techniques eliminate the optical problems associated with the wearing of cataract glasses.

Those patients unwilling to undergo cataract extraction can often be considerably helped by low vision aids and, in any case, are usually better adapted to their defective vision than those to whom no positive medical or surgical procedure can be offered to alleviate their problem.

Well behind those patients with macular degeneration and cataract come the next group, advanced glaucoma. Here we are entering the realm of visual field defects, where considerably less help is available than to patients with central visual loss. It is my



impression that we tend to see less of this type of patient, possibly because the condition is being detected much earlier and before irretrievable and major field defects arise.

If the major field defects should occur before treatment is sought, they are usually more advanced in one eye and it is often possible to slow down or prevent such changes in the fellow eye. If major field changes should be present in both eyes, the patient may be extremely handicapped even though he can read the 6/6 lines on the chart, as he is unable to see things around about him and has great difficulty in moving about without knocking into things. Of course he is quite unable to drive a car as he is unable to see things coming at him from the side. Very little help can be offered to these patients, apart from mobility training, hence the early detection of glaucoma and its effective treatment is of paramount importance.

It is difficult to give the relative incidence of the various other conditions seen in practice which lead to low vision, as they comprise a relatively small number compared to the foregoing. Probably diabetic retinopathy would head the list. Here again, treatment in the way of early diagnosis, good control of the diabetes and the use of laser therapy to destroy abnormal blood vessel growth and seal off leaking blood vessels in the retina can often help these patients to retain useful vision for extended periods. This condition often affects patients during their working years and is bilateral, again often more advanced in one eye than the other. We need to know more about the underlying pathology so that retinal damage can be prevented, but modern therapy has considerably improved the outlook for these patients.

I will not dwell on the other types of low vision seen in private practice; most of them are rare and often affect only one eye. However, I cannot close before mentioning the subject of low vision in children. While I see few cases, the commonest is probably congenital nystagmus. Many children with this cope well with normal schooling in spite of their handicap. It is essential to correct fully any refractive errors and treat any associated strabismus to give the maximum vision in each eye. Those with significant visual handicap can often be helped by simple measures at school, such as sitting

closer to the board. Fortunately in many cases their reading vision is often better relatively than their distance vision, which reduces the handicap somewhat. In my view, the most important point in examining a child is to assess the degree of visual handicap as early as possible.

In summary, the incidence of the types of low vision seen in private practice closely parallel those seen in hospital practice and many patients can be helped by medical and surgical means if seen early enough. Even if this is not possible, counselling and relatively simple measures may often provide considerable help.



## DELIVERY OF SERVICES WITHIN THE COMMUNITY: SERVICES IN REMOTE AREAS

Helen Robbins

Over the last five to ten years, interest in low vision services has led to the establishment of low vision clinics in each of the State capitals. Because low vision care is still in its developmental stage in Australia, there has not been any great emphasis on delivery of services to the more remote areas.

This paper examines the concept of "remoteness", placing particular emphasis on the population distribution of Australia and the age profile of low vision patients. The second section looks at various models of service delivery for remote areas and the final part tries to set some priorities for the development of low vision services in Australia to give the majority of the population access to high quality low vision services.

## How Should We Define "Remote"?

It may be that one's definition of "remote" depends on where one lives and the circumstances of the moment. Patients who have arrived late for their appointments at the Victorian College of Optometry Clinic, in Carlton, on being asked to wait, have been heard to say: "But I've come all the way from North Carlton".

For a more objective definition of "remote" we can consider the Federal Government's "Isolated Patients' Travel and Accommodation Assistance Scheme". The aim of this scheme is to assist people in isolated areas to meet the costs of specialized health care not available in their own locality. The scheme will provide assistance with costs of travel and accommodation when patients have to travel long distances for treatment.

## Benefits:

- . travel allowance at the cost of return travel, less the first \$20.00, by the most direct route and by economy class on scheduled road or rail services;
- . an accommodation allowance of up to \$15.00 a night where medical and/or transport conditions make it necessary.

## Eligibility:

- . benefits are applicable to patients referred by a medical practitioner and to an escort if the patient is aged under fourteen or if certified necessary by a medical practitioner;
- . patients must reside in an isolated area defined under the Act. Isolated areas are determined on the basis of local government area zones as local government areas having 50% or more of their population residing at least 200 kilometres, by the most direct road or rail route, from the capital cities' general post offices or the central post offices of cities with populations greater than 100,000.

Lists of local government areas excluded from the scheme are available. These lists, together with 1976 Census data, indicate the proportions of the population included or excluded from the scheme (Table 1, p.177). From Table 1 it can be seen that 82% of the population live within 200 kilometres of a capital or major city.

The same data can be represented more dramatically on a map (Figure 1, p.170). It should also be noted that of those living in remote areas, 40%, or a further 7% of the total population, live

in some 44 centres with populations greater than 10,000. In all, 89% of Australia's population live within 200 kilometres of a capital city or in a remote area in a town of more than 10,000 people.

There are also other travel assistance schemes, such as the Victorian State Government Scheme and travel by ambulance which is free for eligible persons.

However, we must not forget the type of patients attending low vision clinics. In a 1977 survey of the Kooyong Low Vision Clinic (Robbins, 1978), our patients had the age distribution shown in Figure 2 (p.170). Using this data it can be shown that 55% of the patients are aged over 70. Many people in this age group will be physically unable or reluctant to travel the distance to a central low vision clinic. Of course, it can also be argued that the patient who lacks the motivation to travel to a low vision clinic may also lack the motivation to make use of the services available there.

#### Models for the Provision of Low Vision Services

##### Central Low Vision Clinics

Provision of a low vision clinic in each of the State capitals will ensure that 82% of the population is within two to three hours, by car, of service and it will also ensure that there is a group of professionals, learning from experience and by interacting with each other, to provide the foundations for low vision care in each State.

However, it will not cope with the needs of those living within that area who are unable to travel and certainly will not reach patients living in remote areas who have moderate needs for low vision services. Patients from remote areas who need extensive rehabilitation will probably always be best served by a large central facility.



Figure 1: Local Government areas excluded from Isolated Patients Travel and Accommodation Assistance Scheme (IPTAAS)

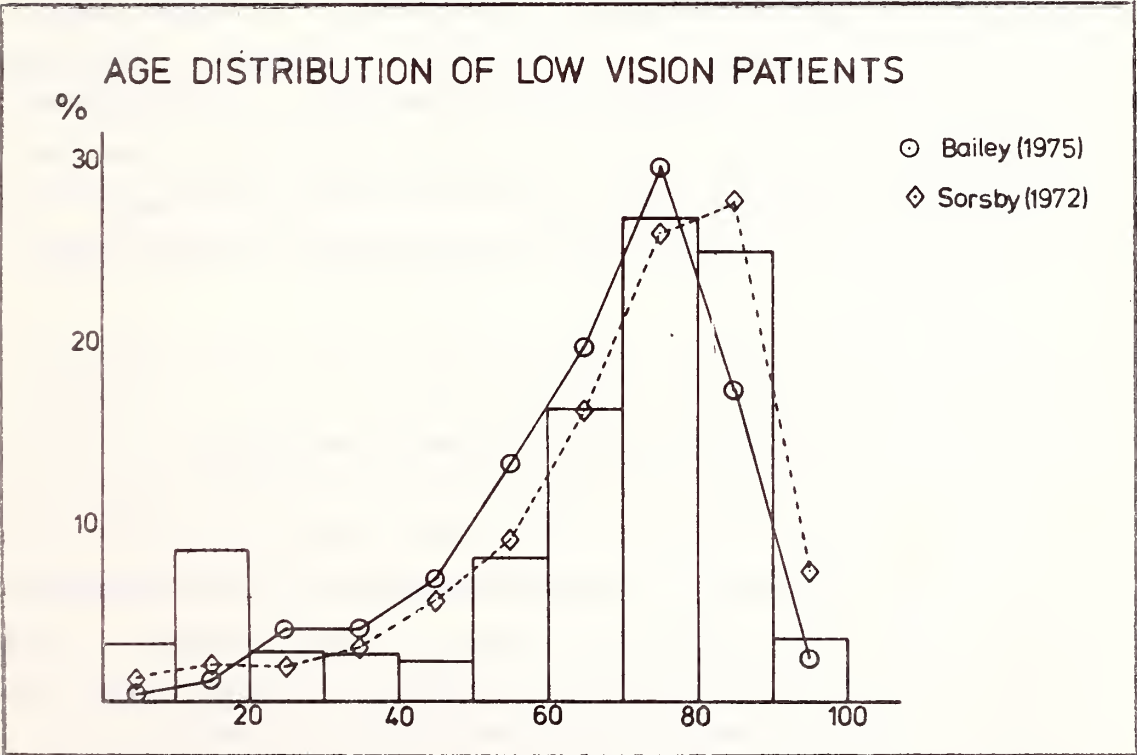


Figure 2: Age Distribution of Patients attending Kooyong Low Vision Clinic 1972-1976 (Robbins, 1978)

## Regional Low Vision Clinics

The prevalence of low vision, that is, acuity less than 6/15, is thought to be about 1% of the total population (ANCB, 1978). If we assume that half of these people have already received adequate care from their private practitioner or do not wish to receive additional assistance, then in a hypothetical country town with a population of 50,000, there would be about 250 potential low vision patients. Sorsby (1978) indicates that the incidence or number of new blind registrations per year is about 11% of the registered blind population, so we could expect about 28 potential new patients each year.

In the Kooyong Low Vision Clinic in 1979, 745 new patients were assessed, together with many review visits. The optometrical sessions worked were equivalent to about one and a half full-time optometrists or about 500 new patients per full-time optometrist. The services of ophthalmologists, occupational therapists, social workers and mobility instructors are utilized at about half the rate of optometrists.

If we reconsider our hypothetical country town, it is clear that there will not be enough low vision patients to occupy an optometrist on a full-time or other staff on a half-time basis. It should also be remembered that within the remote areas of Australia, there are only 2 centres with populations of 50,000 or above. The mean population of the 44 largest centres in the remote area is 22,000.

## Local Practitioners with Advanced Training in Low Vision

From the estimated figures in the previous model, it will be obvious that only large centres will have enough low vision patients to occupy a practitioner on a full-time basis. However, there would seem to be a solution to the problem in using practitioners, optometrists or ophthalmologists with special training and interest in low vision on a part-time basis. These practitioners could work from their own consulting rooms, from hospitals or from community health centres,



depending on individual circumstances. They could link in to existing community services such as social workers and occupational therapists and make use of mobility instructors and welfare officers from the blindness agencies in the State capitals.

The main problem with this model is attracting the right practitioners. Recently an optometrist who has just completed a Master's degree in low vision and who has worked for twelve months at the Kooyong Low Vision Clinic, has commenced private practice in a country town some 260 kilometres from Melbourne and is planning to operate in the fashion described above. This is probably close to the optimal solution to the provision of services to remote areas.

The central low vision clinics have an important obligation to provide theoretical training and clinical experience to any optometrist or ophthalmologist who wants to practice this profession in a remote area and who plans to take a special interest in low vision. It has been our experience that optometrists in private practice are not particularly interested in continuing education courses in low vision. Country practitioners generally complain of the difficulty in obtaining staff, so that any optometrist or ophthalmologist with an interest in low vision and the desire to practice in the country deserves every assistance and encouragement.

Central low vision clinics can also provide specialist training for social workers and occupational therapists.

It should also be said here that the central low vision clinics, together with University Departments of Optometry and Ophthalmology, should be providing all their students with the basic background in low vision, which will enable graduates to care for their own patients in the early stages of low vision and to refer them for other services when and if appropriate.

## Mobile Services

In 1977, the Kooyong Low Vision Clinic started using a caravan in an attempt to provide some sort of service to remote areas. It has made six trips and has visited Geelong, Bairnsdale and Mildura. A staff member has been appointed recently to coordinate country trips and it is hoped that visits to remote areas can now occur more frequently.

The staffing model we have used is a nursing sister making the preliminary arrangements for the trip and then conducting the same type of general assessment as in the clinic, and an optometrist conducting a low vision assessment. Again there has been difficulty in obtaining the right staff. Because our Low Vision Clinic is associated with a teaching institution, many of our optometrists have regular teaching commitments and the rest tend to become involved in study for further qualifications, so that it is often difficult to provide optometrists, except during term vacations.

Staff in a mobile clinic must be very experienced in low vision care because when patients present, their needs must be assessed quickly and appropriate action taken. One of the major functions of a mobile clinic is to sort patients into those whose needs would be best met in a central clinic and those whose needs must be met on the spot, even if the service provided in this way is incomplete. For example;

- . previous patient managing well asks for aid just a little stronger than he has been using - if aid is available, the new aid is provided on the spot or by post;
- . new patient, moderate to severe impairment of vision, no previous low vision care, needs in many areas, willing and able to travel to central low vision clinic - arrange referral;

- new patient, very old, very frail, only wants aid for correspondence, some of other needs fulfilled by community services. Although this patient may benefit from a full assessment, after consideration of difficulties involved in travelling, prescribe reading aid and try to arrange further help from community services.

When we visit a country centre we contact all previous patients in that area, inviting them to attend for an annual review. We also contact local optometrists, ophthalmologists and general practitioners, advising them of the services we offer and asking them to refer any of their patients who may benefit. In some centres we place a carefully worded advertisement (Figure 3, below) in the local paper. This has been modified over several visits and in its current form, seems to reach the maximum number of low vision patients, whilst attracting the minimum number of people with normal vision.

ASSOCIATION FOR THE BLIND  
MOBILE SIGHT CONSERVATION UNIT  
LOW VISION SERVICE

FOR

PEOPLE WHO CANNOT BE  
FULLY HELPED BY NORMAL PRESCRIPTION  
SPECTACLES

At Bairnsdale District Hospital from Monday 30th  
June to Friday 4th July.  
ALL APPOINTMENTS (051) 52 3333

Figure 3. Sample Advertisement Used on Country  
Visits by Kooyong Low Vision Clinic

We usually work in conjunction with a local hospital, making appointments through their switchboard and parking the caravan in their car park. We also utilize the services of local welfare officers, occupational therapists and social workers.

In conjunction with the visits of the caravan, the Association has organized educational programmes for the local health care workers and these sessions have been very well received.

A mobile service does not necessarily have to operate from a caravan. Many country hospitals would be able to provide rooms for a short period, although having a caravan does tend to generate country trips, since as soon as the caravan is back at Kooyong for any length of time, there is pressure exerted from within the Association to visit the remote areas again.

The advantage of a mobile service to patients is obviously the convenience of having a low vision service in their own locality. However, there are several disadvantages, such as the long interval between visits, the high cost of running such a service and the difficulty in attracting the right staff who will be prepared to travel.

#### Priorities for Services to Remote Areas

Our first priority must be the establishment of an efficient, enthusiastic and out-reaching low vision clinic in each of the State capitals. Not only will this mean that 82% of the population will be within three hours by car of low vision services, but these clinics will also provide background knowledge, experience and support for practitioners who want to work in low vision in remote areas.

Secondly, encouragement and assistance must be given to practitioners who want to establish part-time low vision services in larger centres more than 200 kilometres from the capital cities.

Thirdly, because many low vision patients are old and unable or unwilling to travel long distances, there should also be encouragement and assistance to practitioners who want to establish part-time low vision services in the larger rural centres less than 200 kilometres from the capital cities.

Fourthly, the educational role of central low vision clinics must be promoted so that they help to provide the necessary background in basic low vision care to all optometry and ophthalmology students, as well as offering specialist training for optometrists, ophthalmologists, occupational therapists and social workers who want to establish low vision services in remote areas.

Fifthly, mobile services should be provided as an interim measure, but, hopefully, as the above priorities are realized, the need for mobile services will decrease with the establishment of part-time low vision services by private practitioners.

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State	Population	Included In IPTAAS	Excluded From IPTAAS	% Excluded
New South Wales	4,777,103	856,098	3,921,005	82.1
Victoria	3,646,981	385,011	3,261,970	89.4
Queensland	2,037,197	496,623	1,540,574	75.6
South Australia	1,244,756	229,496	1,015,260	81.6
Western Australia	1,144,857	238,165	906,692	79.2
Tasmania	402,866	129,945	272,921	67.7
Northern Territory	97,090	97,090	-	0
Australian Capital Territory	197,622	-	197,622	100
Total	13,548,472	2,432,428	11,116,044	82.1%

Table 1: Distribution by State of persons excluded from the  
Isolated Patients Travel and Accommodation Assistance  
Scheme (IPTAAS)

## DELIVERY OF SERVICES WITHIN THE COMMUNITY: COMMUNITY HEALTH CENTRES

Jan E. Kitchen

We have heard this morning how low vision services are provided in Australia in specialist clinic settings and, to a lesser extent, at private practitioner level.

I would like to propose a model of service delivery based on community health centres and indicate to you why and how this shift in service delivery should occur.

The First Report of the Victorian Health Commission, 1978/79, states: "The Commission supported by the Government, is currently moving towards a philosophy of planning that is structured in terms of regional needs rather than in terms of individual institutions". It goes on to say: "Regionalization must be evolutionary, with the forms of regional organization and the responsibilities devolving upon them being allowed to develop over time". But this organization does not simply develop, it has to be *made to develop*! The report later states: "The objective of this (the Community Health) programme, wherever possible, has been to rationalize and re-deploy specific services from institutions into a community setting". (Incidentally, it cites as an example of progress the provision of optometrical services by the Victorian College of Optometry through a community health centre).

As Mr. MacKellar indicated yesterday, governments are already putting pressure on hospitals and other health care institutions to rationalize their services. It is obvious that agencies and clinics presently providing services to blind and visually impaired persons will similarly be expected to examine their own services.

Smith and Bailey, in their report on "Blindness in Australia" (1976), were critical of the Australian National Council of and for

the Blind (ANCB) in that it had not "addressed itself to self-study and the examination and rationalization of the field of blind welfare".

There have been a number of reports presented in recent years, both here and in the United States of America, warning us that this rationalization is necessary, that our present services are not reaching all visually impaired people and recommending decentralization of services to low vision people (Bishop, 1975, Rosenblum, 1976, Smith and Bailey, 1976, Holdsworth, 1976 and 1977). It has been suggested that this decentralization should occur by greater dissemination of knowledge and by providing services on a community basis. This is seen as necessary to meet the needs of the thousands of visually impaired people not receiving services from which they could benefit (Smith and Bailey, 1976, Holdsworth, 1977).

However, the mechanics to achieve this decentralization have not been made clear, so that in Australia this decentralization has occurred to only a limited extent. The Royal Guide Dogs for the Blind Association has provided orientation and mobility services to community health centres in Richmond and San Remo, Victoria and to the Kings Meadow Centre in Launceston, Tasmania and we have heard that the Low Vision Clinic here in Melbourne is making efforts to meet the needs in remote areas. But this is not enough.

Rosenblum (1976) challenged the specialist agencies for the blind and visually impaired with the responsibility of working in with existing community services in order to widen the service options of visually impaired people.

As a move to accept their responsibility for examining low vision services in Australia, the (ANCB) set up a working party in 1977. Its report was presented in 1978 and it recommended a three-tier programme within each State of Australia, namely:

- . private practitioner level;
- . regional units;
- . capital city specialist clinics.

## Private Practitioner Level

I believe a lot can be done, and is slowly starting to be done, by all agencies and clinics to share our knowledge and experience with private optometrists and ophthalmologists so that they can provide for the overall needs of the patient with moderate low vision. Helen Robbins has already touched on areas for improvement and it is outside the scope of my paper, so I will not dwell on this level.

I wish to examine the second level of provision of low vision services recommended by the ANCB Working Party. That is:

## Regional Units

The Working Party suggested that low vision clinics should be established at appropriate, strategically placed regional locations throughout each State. As a guide, the Working Party proposed that five regional units would be a practical starting point for Victoria. Helen Robbins' examination of Australia's population and its distribution indicates that Victoria could not utilize five regional clinics solely serving low vision people.

However, as a consequence of government attitudes towards regionalization of health care services, community health centres have been established in many regions throughout Australia. Why not make greater use of these existing community-based resources for low vision people, as has been suggested previously by Rosenblum (1976), Smith and Bailey (1976) and Holdsworth (1977) and as the ANCB Working Party itself goes on to suggest later in its report?

I see a number of *advantages of providing low vision services through community health centres* as opposed to use of general community services, hospitals or even specialist low vision clinics.

These advantages are:

- . multidisciplinary team;
- . coordination of services;
- . team confidence and feedback;
- . routine domiciliary visits;
- . avoids medical connotation;
- . avoids labelling process.

It is unanimously agreed by all those working with low vision people that a multidisciplinary team is required to provide for the total needs of low vision people. Community health centres provide or have access to the different services required.

Having the various services together within one centre ensures better coordination of services and avoids the risk of patients getting lost in a network of general community services through lack of this coordination. Dr. Freid pointed out that this can be a problem.

The various team members get to know each other well and to have confidence in each others abilities. Staff meetings are held regularly providing feedback to all team members and identifying any weaknesses which can be improved upon. This team approach is, therefore, more effective than a network of people working in different areas of the community.

The centre's allied health professionals (as the Health Commission calls them) routinely carry out domiciliary visits which we would all agree provide a more effective service, but which specialist clinics do not have the time or money to provide routinely.



Community health centres are now recognized by people for what they are - centres providing medical, paramedical, social and welfare services - thus avoiding the purely medical connotation of hospital clinics.

Use of community health centres avoids the labelling process involved in referral to blind or low vision agencies and clinics.

Now to the mechanics of this community based model.

Do existing community health centres have the necessary resources to serve low vision patients?

The Victorian Health Commission (1978/79) lists sixty-one community health centres in Victoria - twenty-nine in the metropolitan area and thirty-two others (country areas). The Melbourne telephone directory lists thirty-six metropolitan centres at present. As far as I could determine, seven community health centres, four metropolitan and three country centres at present have eye-care services provided by optometrists or ophthalmologists.

As there is a greater spread of practising optometrists throughout each State, the ANCB Working Party suggested the establishment of sessional clinics at community health centres under the control of an optometrist, with the support and cooperation of the local or regional ophthalmologist.

East Preston Community Health Centre is the only centre to have a full-time eye-care practitioner. From examination of other centres' patient statistics, budgets and the area populations, I suggest that a further nine centres, six metropolitan and three country centres, could support full-time general optometric or ophthalmological services and as many as a further seven centres (five metropolitan, two country) would support part-time eye-care services. (Table 1, p.187).

Obviously, there are many factors I have not taken into account in suggesting these figures. However, if eye-care services were provided even on a sessional basis from community health centres in

regions such as Broadmeadows, Deer Park, St. Albans, Footscray, Richmond, Corio/Geelong and Eaglehawk/Bendigo, then we would be much better able to provide services to low vision patients, while they remain in, and of, their own community.

Those of you who know Melbourne can see that these metropolitan areas are fairly densely populated, have high migrant populations, are lower socio-economic areas and I contend that they are areas from which the Low Vision Clinic is not receiving many patients. The community health centres in these areas are large, with community health nurses, social workers and occupational therapists on the staff to provide services to low vision patients. The Royal Guide Dogs for the Blind Association can fairly easily provide orientation and mobility services, as they have already done at the Richmond centre.

How do low vision patients get to the services of the community health centres?

That is another advantage of the community health centre model - in many cases it is already there for general medical needs. How often might this scenario occur? A general medical practitioner refers a patient with visual problems to the local ophthalmologist and receives a report saying the patient has senile macular degeneration and changing the glasses will not help her vision. The general practitioner continues to see the patient, perhaps monthly. She has increasing difficulty seeing where to sign the Medibank form, her clothes are becoming very spotty, her fingernails are unkempt and her lipstick smeared all over her face. The general practitioner must be able to recognize this patient's problem and be aware of the assistance which occupational therapists, social workers and optometrists can provide for this woman. If these services are all within the community health centre, it is so much easier for the general practitioner to make appropriate referral and so much easier for the services to be coordinated.

If this patient is not already under the care of community health centre services, then it is the responsibility of the optometrist or ophthalmologist, to whom she must at some stage present, to refer the patient for these services.

Does this system in fact work? The optometrist who has worked full-time in a community health centre and who is an experienced low vision practitioner says that internal referral for other services does occur very easily. He has no qualms referring patients with moderate low vision to other services within the centre. However, he points out that just as private optometrists and ophthalmologists have little expertise in the more specialized area of managing low vision patients, occupational therapists, social workers and orientation and mobility instructors working in community health centres need more training and experience specifically in low vision care if they are to confidently serve the needs of low vision people.

So, as the ANCB Working Party recommended, the agencies and clinics for the blind and visually impaired should provide the specialist training for all the community health centre staff.

My proposed model of providing low vision services through community health centres in no way detracts from the importance of the role of the central clinic or agency. The third level of the ANCB three-tiered programme is the one specialist clinic in each capital city. The Working Party suggests that this clinic should handle the metropolitan area. I contend that at least in Melbourne and Sydney, the metropolitan area is not fully served by one clinic. The provision of services within community health centres in selected regions of the cities is preferable to the establishment of more clinics solely for low vision people.

I see the role of the existing specialist clinics to be shifted somewhat to the following:

Firstly, handling the "difficult" low vision patient - that is, the patient who for some reason requires services or expertise which is beyond the scope of the community health centre.

Secondly, the clinics act as referral centres. Patients may be referred from any source, but the centre must determine whether the specialist clinic services are the most appropriate or rather, wherever possible, refer patients back to more accessible community services.

Thirdly, and most importantly, the clinics serve as resource centres. The expertise of the clinic staff will be required to train community health centre staff to manage low vision patients. I feel this training should include allowing the different professionals to work at the clinic on a sessional basis for a few months to develop first hand experience with low vision patients. Educational programmes for private medical practitioners, optometrists and ophthalmologists should also be carried out to make them more aware of the services available at the community level. These training programmes will be especially required to initiate the shift from specialist clinic services to the community services but the clinic will always act as a resource for the community centres.

Finally, the clinics and agencies must initiate evaluation programmes to evaluate the effectiveness of the clinic services, the effectiveness of the community-based services and the effectiveness of their educational programmes.

In summary then, to establish delivery of services to low vision patients through community health centres: more eye-care practitioners must work from health centres in appropriately selected regions; they, together with the other service providers in the community health centres, must be trained in the management of low vision people; private health practitioners must be made aware of community services which can help their patients with low vision.

Finally, and most importantly, the agencies and central clinics themselves within each State must, in a coordinated manner, accept the responsibility for initiating this shift from specialist segregated services to community-based integrated services.



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Total Number		Number with Eye Care Services			
		At Present		Proposed	
		F/T	P/T	F/T	P/T
Metropolitan	29	1	3	6	5
Country	32	-	3	3	2
Total	61	1	6	9	7

Table 1: Community Health Centres in Victoria

## PAEDIATRIC LOW VISION SERVICES IN AUSTRALIA

Eric Searle

At a seminar held in Brisbane in June, 1979, Ian Bailey made the following statement: "To paint a typical example of the use of low vision aids one would refer to an elderly patient, probably female, who would be enabled to perform some limited near vision tasks with the use of two or more near vision magnifiers. And generally the patient is overjoyed because it has been some considerable time since she could last perform these tasks and with her new aids she gains a limited independence that she had thought was lost forever."

I am sure that most of you would agree with the sentiments expressed in this quotation. However, I am delighted that the conference organizers have given this opportunity for the study and discussion of a numerically small but vital section of the community - visually handicapped children. The term "visual handicap" has been used deliberately in preference to "visual disorder", "visual impairment" or "visual disability" to refer to those children who, even with the best optical correction provided by regular lenses, still have visual impairment from the performance standpoint in a school setting.

Overseas visits and another visit to all Australian States late last year have confirmed my opinion that the delivery of low vision services to visually handicapped children varies in method and extent from place to place. These include facilities provided by private ophthalmologists, private optometrists, State, church and private school authorities, hospitals, colleges of advanced education, rehabilitation centres, adult low vision clinics and paediatric low vision clinics.

A discussion of the details of all these types of services is impractical in the time at my disposal, so I have decided to refer only to the one with which I am most familiar. It is the only paediatric low vision clinic in Australia and is located at Narbethong School for

the Visually Handicapped in Brisbane. This school is part of a wide range of educational facilities conducted by the Queensland Department of Education for visually impaired children. These include advisory (visiting) teacher service to regular and special schools, integrated secondary school resource room programmes, units for the visually handicapped attached to primary schools, a school for the visually handicapped to function as a central resource school and other special schools. The educational philosophy adopted is that education should assist the development of the child towards maximum enjoyment of adult life at work and at play. Where there is a visual handicap there must be modification of the usual programme. Least modification is most desirable. In some cases, the low vision clinic team can minimize modification.

The planning of the paediatric low vision clinic at Narbethong School started in 1972 and began functioning in 1974. Much assistance, advice and information were given by Mr. John Wilson, Executive Director, Association for the Blind, and the Lighthouse Low Vision Service, New York Association for the Blind. It was decided to use a team approach with each member having expertise in a relevant field. The members include a supervising educator, an educator specially trained to coordinate school and home environment, an ophthalmologist, an optometrist and a psychologist. Three members of the team are full-time employees of the Department of Education, while the ophthalmologist and optometrist are paid by the Department of Education on the same sessional basis as visiting specialists in hospitals.

After obtaining written consent from the parents, information is requested from many sources including ophthalmologists, schools and other medical and paramedical personnel. It is important to ensure that the passing of misinformation and the development of misunderstandings do not occur.

Children of school age form the majority of those seen, but a large number of pre-school children from a few months old and work trainees are also included. Many of these children are in schools other than Narbethong or the special units in Toowoomba and Townsville and remain there. When first referred, medical and educational reports

are received. These help determine if an appointment at the low vision clinic should be offered or whether other forms of help are more appropriate. This specialist clinic is designed for visually handicapped children as defined earlier. If all referrals were accepted, unreal waiting lists would be inevitable and the expertise of the team members would be inefficiently used. Since 1974, just over four hundred individual children have been assessed.

All parents are asked to attend the first interview sessions on three consecutive days and some come for the annual follow-up visits. As Queensland is the largest Australian State after Western Australia, some children and their parents travel over 2,000 kilometres to attend the clinic. Narbethong Welfare Association owns a house adjacent to the clinic and makes it available free of charge. The Department of Education meets all transport costs.

A detailed medical history is taken, including family history and that of pregnancy, labour and the neonatal period. Previous assessment and treatment are noted and the name of the attending ophthalmologist is always recorded. This is not a medical treatment clinic and children continue to attend their own ophthalmologist. Very occasionally, where a child is obviously not kept under medical supervision or where an emergency arises, treatment may be initiated.

Full ocular examination is carried out in a specially planned facility in the new school complex with sophisticated instrumentation. Refraction is checked under cycloplegia and fields measured and tonometry performed where appropriate. A definitive diagnosis is attempted. Simple genetic information is given.

Information from the ophthalmological examination is studied carefully by the optometrist to determine if any available aid or one specially designed would assist toward fuller participation in the appropriate school programme. There is no limit to the aids available, the limit being determined by the imagination. Non-optical aids are often incorporated into classroom facilities. Illumination must be considered. Careful instruction is given in the use of aids, their care and maintenance, and frequent visits are made to the classrooms to monitor progress. It is difficult to correlate cost



and design in many instances. Not always is the more expensive aid the better one for the child. Many less expensive aids exhibit better optical efficiency. It is important to check classroom results with consulting room measurement. Where possible, aids are provided on loan for a short trial period. This helps to overcome the "halo" effect, especially with the dearer, more sophisticated equipment. Most prescriptions are dispensed at the Optometry Clinic at the Queensland Institute of Technology. This gives valuable training to students, under strict supervision, of work somewhat different from that undertaken in the normal course of training.

The psychologist studies carefully the child's records of school progress and applies appropriate measures of intellectual ability, tests of achievement in the basic school subjects and, if appropriate, indicators of social and emotional maturity and tests of visual efficiency.

The supervising educator and the educator trained to coordinate school and home environment make all necessary prior arrangements with the parents, other team members, referring agencies or individuals. They also obtain written consent and relevant reports and undertake the implementations of decisions made by the team. These decisions are reached by each member dealing with the child individually at first, followed by team consideration and discussions with the patients.

Investigation and management of visually handicapped children differs largely from that for the aged for the following reasons:

- the child and his parents are involved;
- different skills in patient management are required;
- detailed knowledge of child development is necessary by all members of the team;
- different testing material is required;



- the expertise required by team members in a paediatric low vision clinic requires that its composition must be different from that at a low vision clinic for adults, some 85% of whom will be over sixty years of age;
- visual activities of children and the environments in which they function are significantly different from those of adults;
- attitudes caused by social pressures around puberty require special handling techniques;
- all special schools have experienced in recent years a significant increase in the number of children who have several handicaps. These include intellectual retardation, deafness, epilepsy, asthma and neurological and orthopaedic problems. At Narbethong School these children have increased from 12% in 1959 to 26% in 1970 and 50% in 1980.

Dr. Mary D. Sheridan in Visus, January 1979, makes the following points as her considered opinion after over thirty-five years as a school medical officer in the United Kingdom:

- there is general agreement that the earlier visual defects are diagnosed and treated the more favourable is the outlook for correction or improvement in function;
- the relationship between faulty visual perception and the learning difficulties of young children is now better understood;
- the importance of determining visual competence as part of the full assessment of handicapped children is now clearly recognized.

I would suggest that these matters can be most effectively dealt with by the team members of a paediatric low vision clinic.

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## REVIEW OF SESSION

Gerard Crock

This morning, Dr. Sax asked me two questions when I came in: what is low vision and what is the value of treating it? I hope that this session has answered both those questions.

We are now in the second day of a marathon and I intend to make some general comments and then perhaps sympathetically and quickly discuss the individual presentations.

It is an amazing fact about the human condition that ideas and actions are generated simultaneously and independently around the world. There is no doubt that this applies to the emergence of low vision clinics and interests in the care of people with low vision. We are not here to compare models; they exist and they all serve a most remarkable function. Margaret Lawrence and Felicity Purdy made it seem a bit too easy, I thought, but to me it is like the perfect marriage: it is something that you have to keep working at for the whole of your life. I am sure that as low vision clinics and services evolve, we will find that it is necessary to work on this question of interprofessional cooperation, not at a lip service level but at a very practical grass roots level.

One aspect that hasn't yet even been referred to is that the low vision clinic has a very important role to play in research and assessment, particularly pre-operative assessment. It is clear from all the presentations that we are in an evolutionary phase, both regarding staff structure, funding and outreach. Whatever we may say, however, this area of human activity is here to stay and it is part of the problem of multihandicap which affect all age groups in our community.

There is another point that I think needs to be emphasized that has been touched upon in various ways. I think it is essential that we

have informed referral, and I say this particularly as somebody interested in the retina and particularly in diabetic retinopathy. Too often as super specialists, we tend to regard our method of examination as being the private reserve of the ophthalmologist or the optometrist. Instead, I think that the expansion of modern technology and often the simplification of instrumentation should make it possible, not only for specialist endocrine physicians, but general practitioners and optometrists to be able to examine the eye in a very thorough manner, so that they can make the early and informed referrals that are so essential to the preventive aspects of low vision.

I also think that there is a very great need for objective assessment of people with low vision. We have heard here mostly about the assessment of low vision by subjective methods. However, it is not good enough for the vitreous surgeon to know that the patient has a certain subjective standard of vision. We really do need to know whether a patient is going to get any visual benefit from a complicated, expensive and time consuming operation and that demands the development of super specialist low vision centres and diagnostic techniques which go beyond anything that we have heard in the presentations so far.

There is also a need to remind ourselves that these are concentrated services and that we must not break the important personal, interprofessional link between the patient and his attendant, whether he is a medical or an optometrical attendant. I can only speak from the ophthalmological point of view, but I don't think there is a final end point in the management of the low vision patient. It may be that cataract will not come to play a significant role in the problem until years after the problem of macular degeneration presents. It may be that glaucoma ultimately will deprive a patient of the peripheral field of vision that is so important to somebody with a central macular lesion. But maybe a retinal detachment will develop unexpectedly and can be put back into place. Or it may be that interocular haemorrhage finally puts that patient into the severely blinded group from which he can be easily removed by surgical or medical measures.



There is one dimension that hasn't been touched on today. It will come later in the programme, but it is something that we pressed upon and something in which this Association has been particularly interested. It is the question of a search for intellectual fulfilment, not only in the pre-school and in the childhood age groups, about which we have heard so excellently from the educationalist, but also in the middle aged, particularly the active executives who have become afflicted by the problems of low vision.

Turning to the individual presentations, I was struck in hearing from August Colenbrander about the emphasis that is laid on group therapy in California and on the fact that he put so much stress, even though he is running a very compact unit, on the question of multi-disciplinary approach. I found his statistics and predictions most fascinating. He also highlighted the need that is developing for a complete reorientation of thinking on the role of blind agencies.

When we came to Felicity Purdy, we jumped to Australia and to Sydney. I was interested in the fact that the Royal Blind Society's effort has concentrated very largely in the area of severe handicap. I was also interested that they have discovered that orthoptists have a key role to play. It saddens me that in Victoria, we have not yet been able politically to discover the role of orthoptists in low vision, but we should I think take a lesson from our colleagues.

Coming to Margaret Lawrence, we are talking about home and I don't know that I need to make too much comment. We do not need to look upon any particular institute as a model for all other institutes to follow, but each model I think has a very important role to play. The major role I see for the central clinic is that it has acted as a new era in which the two professions, ophthalmology and optometry, have come to work together in a very effective way in our community. It has established the need to reorient our thinking about the role of delivery of services to blind and low vision people, because it is clear that among the blind there is a very high percentage who have low vision problems. Of course, there is no question, as we have seen from the presentations here today, that low vision clinics become centres for political pressure.



From Melbourne, we went to Queensland and Dr. Joy Grice's presentation. I was particularly taken by her colleague Greg Fanning's presentation on their mathematical approach to eccentric fixation. I have to confess to you that my mathematics give up at vulgar fractions, but what really came out of it is the fact that the care of low vision patients is a very time consuming exercise, and one that requires a great deal of professional dedication.

We then continued with Kevin Rooney in South Australia who seems to have the best set-up in this country. I wonder if it is not due to the fact that the Premier of South Australia is in fact an ophthalmologist!

Next we went to New Zealand. My professional colleagues in New Zealand are a very cohesive group, and though Geoff Gibbs expressed some doubts about the stage of development of low vision services in New Zealand, I would like to assure him that I think he will have very little trouble with the ophthalmologists and optometrists in his country. It is also interesting that it was New Zealand who exported to us the very early, sophisticated closed-circuit television systems that are used in low vision. The other important point made was that we are only looking at the tip of the iceberg when we look at the low vision scene.

We then went to the United States and we heard once more from Allan Freid. The Veterans' Administration model was interesting and it is typical of the enormous resources that are available in the United States. Our own Veterans' Affairs Department in Australia, as you saw from Dr. Grice's presentation, is a little more flexible and indeed is beginning to deal with non-veterans within the service to a limited extent.

Dr. Freid raised the issue of obtaining funding outside the governmental system and the problems associated with this. While professional service organizations such as Lions and Rotary are so important, individual philanthropists, of whom we have at least one here today, are also vital to our work.

My two medical colleagues from Melbourne, John Colvin and Peter Hardy Smith, followed. I look upon them both as very dedicated people and I am most grateful, particularly to Peter Hardy Smith, for the support he has given me over many years as Secretary of the Ophthalmic Research Institute of Australia. We have not yet taken over the United States, but we may do so!

Referring to Dr. Colvin's talk, one thing that worries me is our tendency to make a generalization and overlook some conditions. It is very easy to look into any eye and make a clinical diagnosis of optic atrophy or of disciform macular degeneration. Having seen two or three pituitary tumors, I am very fearful about putting diagnostic labels on people and making generalizations about specific entities. One of the advantages of having multiple assessments is that we are less likely under these circumstances to miss double pathology. I do think that ophthalmology should take good note of what is happening in the field of low vision and should apply these disciplines to its own pre-operative assessment of the difficult cases, which are now treatable in many instances by micro-surgery and other techniques.

Helen Robbins clearly defined remoteness and discussed the provision of services to remote areas; Jan Kitchin discussed the role of community health centres. Both speakers covered the question of logistics, of how services are to be provided and what role the government should play.

Mr Searle from Queensland was last but not least. We have mainly heard reference during this session to middle aged and old aged patients and we know that these groups are expanding. However, we must come back to the realization that perhaps the major socio-economic impact of all these programmes is to be gained in that early phase of life which Mr. Searle discussed.

## SOME POLICY ISSUES IN AUSTRALIAN HEALTH AND WELFARE SERVICES

Sidney Sax

The foundations of health in our community are embedded in a high standard of living, a reasonable level of education in the community as a whole and a general state of literacy. These factors are associated with, and reinforced by, good nutrition and uncongested living quarters. People enjoying all of these blessings readily acquire the knowledge and habits that promote a safe environment and high standards of personal hygiene. Poverty progressively erodes most, if not all, of these benefits.

In its effort to combat poverty the Commonwealth Government has greatly expanded its role in the provision of income security and social welfare. As a proportion of gross domestic product, expenditure on the major component, income support, increased from 2.6% in 1958-59 to 2.8% in 1968-69 and then more than doubled to reach 6.4% in 1978-79. Three main factors have contributed to the growth in expenditure on income support:

- growth in the numbers of pensioners and beneficiaries;
- increases in maximum rates of pension and benefit;
- policy initiatives including the introduction of new programmes and changes in eligibility conditions;

Although the level of demand for Commonwealth income support has attained substantial proportions it is unlikely to decrease in the next decades, especially as the number of aged persons increases. It is to be hoped that the general community will retain its ability and willingness to support increasing numbers of dependents.

I will do no more than make passing references to the Commonwealth's massive contributions to pre-school, primary, secondary and tertiary education. But I do want to focus attention on the fact that if additional resources are sought for hospitals, clinics, medical care and medicines (all activities heavily subsidized by the public purse), some may have to be diverted from other sectors which also depend on government support and are also basic to the health of our community, such as, in this case, education.

The only alternatives lie in increased taxes at a time when pressures are in other directions, substantial increases in national productivity with commensurate increases in public income, and the return of those now unemployed to productive activities.

The Social Welfare Policy Secretariat has closely examined Commonwealth expenditures in the health and social security areas during the past decade to see, firstly, whether government outlays are specifically directed towards those whose poverty could be seen as placing them at greatest risk. Many examples can be found where outlays have not been selective in that sense.

The compounded annual growth rate in social security and welfare expenditures in the past decade has been almost 15%, compared to a growth of 12.5% in per capita national income. A number of questions can be posed in the light of this observation.

How do we plan to meet the likelihood that future growth in the economy may be at a lower rate than the future growth in the labour supply? If we don't plan, what will be the cost in social casualties as society adjusts? What should we do about the proportionately high rate of growth of economically dependent persons in the population? Can we go on planning new services and new facilities to fill gaps, or can needs be met by expanding the capacity and expertise of existing services? Are there services which could be reduced or eliminated because they no longer meet the goals of today's society? Do we have to go on categorizing and labelling new groups of dependent people?



## Commonwealth Influence on Health Services

The type of Constitution we have determines the nature of the Commonwealth's activities in the field of health and explains why, in the main, those activities are directed to the provision of assistance to individuals to help them meet their medical, hospital and related expenses. The planning of most health services and facilities is a State responsibility and their provision is largely in the hands of private organizations and practitioners.

However, the Constitution does give the Commonwealth a very broad power under section 96 "to grant financial assistance to any State on such terms and conditions as Parliament thinks fit". Exercise of this power to institute or maintain special-purpose funding has been the subject of considerable debate in the past decade, is seen differently by different political parties and is influenced by the prevailing view on federalism.

The series of rapid changes in health insurance that began in October, 1976, reflected one or other of the dominant economic objectives of Government at the time of each change. They are:

- to reduce Federal Government spending;
- to cut budget deficits;
- to reduce the rate of inflation.

These goals were associated with a policy on federalism which emphasized State priority setting and espoused general purpose grants at the expense of special purpose grants, many of which were to be reduced or abolished. An early casualty of these policies was the Hospitals Development Programme.

The Commonwealth did, however, maintain some influence on the operation and rationalization of approved public hospitals through the hospital cost-sharing arrangements. It is clear that in a country with so much hospital accommodation, the hospitals development programme should not



have provided additional beds, but it could have promoted a rational hospital system to make best use of current technology and skilled personnel. This could, and should, have involved the closure of redundant beds, especially in inner metropolitan areas and the conversion of low technology country hospitals to alternative uses.

The Community Health Programme was maintained, so the Federal Government may be seen to have retained some of its potential influence for the development and coordination of low cost alternatives to hospital care. Should low vision work have many of its roots in this programme?

#### Services for the Handicapped

In addition to these general programmes, the Commonwealth subsidizes voluntary agencies providing disabled persons' accommodation, sheltered workshops and training centres. You are all familiar with the Handicapped Persons Assistance Act, its general goals, and the assistance it provides for training centres, activity therapy centres, sheltered workshops and residential services. The Commonwealth also funds consultants to advise the Department of Social Security and it funds the National Advisory Council on the Handicapped which was established to advise the Government on policies and services for handicapped people.

The Commonwealth funding programmes are designed to augment the services developed and provided by voluntary agencies. Their capacity to be innovative and their capacity to humanize the services has in the past prompted the community to support such services generously, but recently public concern for greater accountability has demanded scrutiny of the goals on which money is spent and of evidence that client needs are being met cost-effectively. Who should evaluate this? What guidelines do we have for this purpose?

A mechanism for consultation has to be developed, of course, to deal with such questions. Here in Victoria there already exist the

beginnings of a consultative device made up of all parties that work with the visually impaired. This could be extended to include government representation. When fully developed, it could undertake to provide guidelines for the evaluation of services and the determination of needs.

Issues which must be concerning an audience such as today's include a consideration of the scope that there must be for increasing the quality of services, and the extent to which goals can be met to promote care, personal and social development and employment for visually impaired persons.

Much of the work at grass roots level is undertaken by voluntary organizations and they probably face issues related to the recruitment of volunteers, their training and their acceptance of improved coordination and planning of services. This coordination should involve not only the various voluntary organizations but also the Commonwealth Rehabilitation Service and the Commonwealth Employment Service. The sensitivities are immense and will require patience and goodwill; there is nothing to be gained from undue haste in the processes of consultation that must precede a cooperative enterprise based on the preferences of those primarily involved.

The roles, relationships and responsibilities of the different levels of government require more careful definition than seems to be the case at present. This need not involve any change in current funding arrangements. The States are increasingly involved in joint planning for the satisfaction of area needs and are increasingly consulted in respect of specific projects, particularly the larger ones. This constitutes a good start, but we require more information on needs and that information must be shared.

The Senate Standing Committee on Social Welfare has brought into the open the lack of data that are available to governments and organizations which attempt to satisfy specific needs and evaluate the services that they manage for handicapped and other persons. The Senate Standing Committee pointed out: "The consequences of not evaluating are possible indiscriminate cuts in funds, indiscriminate handing out of funds, continuance of the present ad hoc decision

making process, perpetuation of the present inadequacies in the health and welfare system, and a possible lack of alternative solutions to problems in health and welfare".

#### Low Vision Services

The assessment of work content and of manpower requirements for low vision services is important. There are four professional groups who attract attention in considerations related to the preparation of personnel. They are ophthalmologists, opticians/optometrists, optical dispensers and orthoptists. To varying degrees these groups have been wary or uncertain of each other's roles, and there could be value in encouraging them to attempt agreement on methods of working together more closely. This would lead to more accurate analysis of personnel requirements and possibly to a more rational organization of services for those with low vision.

Is there any need for a special category of staff, known perhaps as "low vision workers" who would need special training? What in reality is "low vision"? Is a clinical definition sufficient?

I understand that most persons attending the ten low vision clinics in Australia are over the age of sixty years, and that about 4% of them have no capacity for independent mobility. In attempting to reach some conclusion about the expansion of this system of clinics, responsible authorities no doubt would seek information on the users of the services - their age, sex, nature and cause of disability - and on the effectiveness of the programme in overcoming handicap and maintaining independence.

The location of low vision clinics deserves consideration. Are they best associated with hospitals or with institutions for the blind? Should they be independently located in the community, or should they be associated with health centres or educational facilities? What is the role of private practice? Are there other possibilities?

## Prevention

You will have noticed that a very determined effort is being made to direct interest and resources into the important fields of prevention and health promotion. While messages are being developed and distributed to the public in relation to such things as exercise, diet, moderation in drinking, abandonment of smoking etc., little specific mention has been made outside of this conference about the preservation of vision. Perhaps it is time for those attending a conference such as this to assess the potential for public education about prevention and health promotion in their field of interest.

What is needed is the development of easily understood basic advice that could be given to people to ensure that they maintain satisfactory vision to the greatest extent possible. Special attention may have to be given to the hidden dangers of many occupational pursuits. In the same context, advice is required about education policies to ensure that many defects in the senses are identified early, so that the education of children with poor vision can be properly adapted at the earliest opportunity. This may involve the evolution of regional assessment arrangements and the careful screening of pre-school children.

Questions of definition and registration require some consideration. If the provision of specific services or benefits is to be considered by the Commonwealth, it would need a definition of "low vision" for eligibility and acceptance of claims. There have been proposals for an Australia-wide register of the blind and of people with low vision. How would it help? How would it be organized? What would it cost? What do the blind and partially sighted think of the concept?

This brings me to the last issue I wish to raise. To what extent do the views of the administrators and the professionals coincide with those of the users of service? What impact on the welfare of persons with low vision is made by the users? What are their channels of communication? How can they be heard in the area of pensions? What special consideration should be given them by employers, architects, shops, publishers, transport operators and entertainers? What are the unmet needs of individuals with low vision who come from different



ethnic backgrounds? To what extent are community attitudes seen by users of services to be patronizing and possibly even humiliating?

I appreciate that the issues I have raised are all under active consideration. I hope that in bringing them together no harm has been done.



## WHAT IT MEANS TO HAVE LOW VISION

Dorothy Judd

While most of what I say today is about my own experiences and my own feelings, I have heard similar thoughts expressed time and time again by other people with low vision.

Recently in Western Australia, a few professionals have become interested in low vision and are becoming quite expert in their own fields. However, as yet there is no team approach to services. There is a low vision clinic with an ophthalmologist and optometrist working together, but no social workers, occupational therapists, mobility instructors, etc. If referrals need to be made, the system becomes quite complex. But even more importantly, because of a lack of understanding of other peoples' roles, referrals are seldom made. I believe that it is very rare that a person with low vision has one isolated problem easily dealt with by one discipline.

My first experience began about fifteen years ago when there was very little interest in low vision. I'd like to relate a few incidents which had a profound effect on me.

I was working in Victoria at the time and visited an ophthalmologist, who told me that I would become blind. There was no further explanation. Like many people, I believed that blindness always meant total blindness and because there was no doubt in my mind, I asked no further. For a couple of years, I thought I would soon become totally blind.

At this stage, I returned home to Western Australia where I visited another ophthalmologist. This time I was given a clearer explanation. I wouldn't be totally blind but would be severely visually impaired. I asked about organizations that would help me. He told me there were two organizations for the blind. I could make baskets at one and live at the other. He added that I wouldn't like either of them. There are two points I would like to make. Firstly, it is clear that he had

limited knowledge of the functions of those organizations. Secondly, he, not I, decided I wouldn't like them. I was left with little information, nowhere to turn for help and a terrible feeling of isolation.

"Where do I go from here? What can I do? Who would be able to help?"

Another area of great concern to me was the lack of understanding from my colleagues and friends. No-one could understand that I could perform some tasks quite well visually but I couldn't manage others. The response that I so frequently heard and which irritated me beyond any other was: "There's nothing wrong with your eyes. They look alright to me ...". I was aware that I was gaining a reputation as a cheat and a snob - opting out of tasks I did not wish to do and avoiding people I didn't want to see. I was also aware that lighting conditions made a lot of difference to me. I could perform some tasks in certain lights but not others. This meant that people could see me doing something at one time and several hours later say I couldn't manage it. I found the loss of ability frustrating, but the disbelief and lack of understanding by my friends intolerable. I lost a lot of friends at that time.

Soon afterwards, I had to give up my job as a pharmacist and hand in my driver's licence. All of these have a considerable effect on one's life-style. I felt useless. I was no longer a contributing member of society. My self-confidence and self-image were at very low levels. I was depressed and confused. Everything I touched I seemed to spill or knock over and I was forever bumping into objects in my path. My level of functioning had dropped, probably more from my psychological outlook than from my visual loss, and even more I felt isolated and alone. No-one understood.

Six years after my initial contact, and out of sheer desperation, I telephoned one of those two organizations that I was told I wouldn't like. It worked. At last someone understood. Not only that, I was referred to the Department of Social Security for financial help and was told where I could obtain low vision aids. Previously, I had purchased aids without any knowledge of what I was looking for and nothing really worked. Now I had help.

I was helped to regain lost skills, for example reading, and with this gain in ability came renewed confidence. My ability to relate to people also improved and their reactions began to affect me less. I am now more able to help others understand my problems and the problems of other low vision clients. Many incidents that frustrated me so much a few years ago still occur, and quite frequently. But they rarely affect me now.

In summing up, I would like to say that my needs, as with those of many other low vision clients, were varied. I needed information to allow me the opportunity to make a rational choice about my future. I needed low vision aids to help me use my residual vision. I needed guidance in a change of employment and also people to teach me new skills, such as braille. All these needs were fulfilled over a period of about six years. It could have happened in a couple of months if only people would try to see the needs from the client's point of view, take the time to explain services available and refer on to other disciplines.

## WHAT IT MEANS TO HAVE LOW VISION

John Blanch

Obviously there is an initial shock when you find out that you are either blind or likely to go blind. I divide this into two sections: long term and short term. Now I don't know which is the better, although in the long term, you do have more time to think about the problem.

I have diabetic retinopathy and in 1973 I lost sight in the left eye. Three years ago my second eye was affected. I now have about 5% of sight remaining.

There is no doubt that it does take some adjusting to visual loss. I have a philosophy, and I have had it since war time, that we are all very lucky to be alive and we must make the most of what we have. We must get on with what we can do ourselves and do it as well as anyone if we can, although sometimes that is not possible.

If you have lost the sight of one eye and know you are going to possibly lose the sight of your second eye, as in my case, you can try and do something to help the adjustment. I immediately made enquiries about learning braille, for example, but I was discouraged from that because that meant a big effort which wasn't absolutely necessary. The recommendation to me was to wait until it was really necessary and then I would find it much easier to learn. I still haven't learned braille!

When you have an accident or haemorrhage in the eye, as I had, and suddenly you can't see, you suffer from shock. I had just a week in hospital to get used to the idea, but after the initial reaction you have to begin to plan. This means obviously that an adjustment to your daily living is necessary. I tried to make

my adjustment as minimal as possible. In other words, I tried to get on with the things that I like to do and have always done. Two big things dropped out: one was reading and the other was driving, which I will discuss a little later.

I thought it might be of interest to you, as experts in your specialist fields, if I ran through the rather down-to-earth, day-to-day things that I have struck. I cannot talk for anyone else, and having heard Dorothy Judd, I think I have been luckier than she was, although I now have a little less sight than she has.

It helps if you wake up in the morning and know where you are! In my case I have had no problem on that score, having been married some thirty-eight years. It is a great advantage to have a sympathetic companion because he or she can put themselves into your shoes and, to use Dorothy Judd's words, "see your problems".

You know where your bedroom is because you probably found your way there the night before, although it is more difficult if you are staying in a motel as we are tonight. But you learn to remember that hot taps are usually on the left and toilet levers and lift buttons are usually in the same place. Even at home, you have to remember where you put things, where your shaving kit is, where the seat is, where the shower is. These are things that you have never had to consciously think about before. How do you know how high to shave? Doing your hair is also tricky.

You also have to think about your clothes. If you are by yourself you certainly must have a system. You must plan and buy accordingly, with the help of sighted people.

I admire totally blind men and women, particularly those who live by themselves and give dinner parties, who know where everything is in their home. This is an inspiration for those of us who are lucky enough to have a tiny bit of vision which enables us to get around.



Until seven years ago I had much better than average sight. I played tennis and other sports and always appreciated scenery. It is a great advantage to have the memory of sight.

We do learn to find our way around and we must have a good memory. If you forget where you put something, you spend hours trying to find it! I like gardening, although my wife tells me I pull up the seedlings often when I think they are weeds! If you put a spade down you must remember where you put it, or you may not find it for some time.

These are some of the practical problems one meets. Sudden blindness may also affect employment. At the time I lost my sight, I was National Executive Secretary to a large accounting company, which involved interstate and overseas travel. I couldn't continue that work without my vision until I was readjusted thoroughly. It also may take a while to receive pensions and other allowances and if you don't have some reserve to fall back on, you could be in a very embarrassing situation. The financial point ought to be remembered by anybody dealing with blind people.

If you can continue with your work, you have to adjust your office and learn how you get there. That is comparatively easy if you have a fraction of vision and know your way around. You have to know the layout of your office and, in my case, I found it essential to learn to type. I used to type as a journalist using the three finger method, but through the Association for the Blind, I was taught to touch type. I can now keep in touch with everyone again and don't have to rely on others to write my letters.

Coming back to my daily routine, eating techniques are important so that you can lead a normal social life. I usually eat lunch out and I find that if I try to keep up my old ways and look at people, even if I don't see them, it helps them as they don't feel as embarrassed as if you are sitting there looking in one direction all the time. It took me a little while to learn to eat pushing the food into the middle of my plate, and using the clock face as a guide

to locating my food. If I have a wine glass I feel for it rather than reaching out and tipping it over. I know quite a few people who refrain from going out to lunch because they are frightened of their manners, but these simple techniques can help you to get on with life, irrespective of not being able to see.

I enjoy my radio immensely and with television, I get quite a lot of value from some of my favourite programmes even without being able to see them. You can hear and if you have thoughtful people sitting with you, they can describe what is happening.

I was referred to the Low Vision Clinic by my ophthalmologist and was given great help here. The ophthalmologist tested my sight and the optometrist prescribed some magnifiers. At first I could read large print books, but I am unable to now.

Those aids that I have found valuable for daily living are typing, which I have mentioned, my tape recorder and my micro tape recorder which I carry with me in my pocket, to act as my memory bank for my telephone numbers and notes. The micro tape recorder is provided on loan by the Department of Veterans' Affairs. Another invaluable aid is the telephone and I have a push button telephone at home because I find it easier to use.

I believe that we should all try to do what we have been used to doing and for that reason, we have started a special interest group at the Association for the Blind. We have had two meetings, the first one addressed by John Wilson, the second by Professor Crock. We are going to encourage special interest groups to be formed, whether they relate to stamps, politics, wine, etc. - in other words, not just the crafts that are offered in the day centres. While the crafts provide great interest for blind people, there is a great need for extra stimulation for those who still want to use their brains.

The final point I would like to make is that I would like to see greater cooperation between all our blind agencies. We are all there for the same purpose and although we do cooperate greatly, I

still think there is scope for further cooperation. We achieved it last year very happily with White Cane Day, held in Victoria on October 15, and we are meeting soon to plan similar activities for this year. Our aim here is, firstly, to inform the public of how they can best help blind people, and secondly, to inform blind people of what is available to them.

## GOVERNMENT FUNDING OF LOW VISION SERVICES

Peter Callanan

In any consideration of government funding of health services, it is necessary to appreciate the variety of health services available and the complexity of health services financing.

For the benefit of overseas visitors, I should mention that Australia has a federal system of government, under which the primary responsibility for the planning and provision of health services lies with the State governments. That is, the State governments are primarily responsible for ensuring that health services of high standard are available to the people of their States. The actual provision of health services is shared by governments, voluntary organizations and private organizations and practitioners.

The Commonwealth influences the provision of health services through its financial support programmes, including the provision of grants and benefits for services provided at the State level and through its supervision of health insurance.

The Commonwealth Government's health policy and its involvement in health services financing are based on the premise that every Australian should have access to adequate health services when needed. Thus the principal involvement of the Commonwealth is in the provision of financial assistance to the States, private enterprise and voluntary organizations, to help them meet the costs of providing accessible health care services and in assisting individuals to meet the charges for those services.

Using this framework for analysis, financial assistance under the more important Commonwealth health programmes is provided in the following ways:

- under the Hospital Cost Sharing Agreements with the States and the Northern Territory, the Commonwealth meets 50% of the agreed net operating costs of recognized (that is, public) hospitals. The Commonwealth also pays \$15 per occupied bed day to approved private hospitals;
- under the Community Health Programme, the Commonwealth provides significant funds to the States for the development of community based health and related services, aimed at meeting the health service needs of local communities. The Commonwealth contributes up to 50% of the costs of approved projects under this programme;
- under the provisions of the Nursing Homes Assistance Act, nursing homes operated by voluntary care associations may have their approved operating deficits funded by the Commonwealth Government;
- Health Programme Grants are paid direct to approved organizations basically as an alternative to the payment of Commonwealth medical benefits. I shall refer to these in more detail later;
- the Home Nursing Subsidy Scheme provides financial assistance to approved, non-profit organizations which provide nursing services to persons in their own homes.

In order to assist people to meet the costs of health services, the Commonwealth pays a number of types of individual benefits:

- Nursing Home Benefits are payable in respect of qualified patients in government and private



- nursing homes approved under the National Health Act;
- Commonwealth Medical Benefits equivalent to the amount, if any, by which the schedule fees exceed \$20.00 are payable in respect of schedule medical (including ophthalmological) and optometrical services. Benefits of 85% of the scheduled fee, with a maximum patient gap of \$5.00 where the schedule fee is charged, are payable for Pensioner Health Benefit cardholders. Uninsured persons classified by their doctors as disadvantaged may receive free treatment and a benefit of 75% of the schedule fee us payable to the doctors;
- Pharmaceutical Benefits subsidize the costs to the individual of listed pharmaceuticals prescribed by doctors or participating practitioners. There is a patient contribution of \$2.75 per prescription for the general benefit, but listed pharmaceuticals are free to Pensioner Health Benefit cardholders;
- Domiciliary Nursing Care Benefits are payable to a person caring for a relative at home who requires professional nursing care.

The private health insurance arrangements enable all insured people, including those with chronic conditions, to receive insurance benefits in respect of medical, hospital and nursing home charges. The Commonwealth benefits and private health insurance arrangements are designed to complement one another in providing a general umbrella to protect the community against incurring excessive costs through health care.

I have confined my description of funding programmes to some of those administered by the Commonwealth Department of Health. This is by no

means an exhaustive listing of government assistance. For example, services and financial assistance are available through the Handicapped Persons Assistance Act and the Commonwealth Rehabilitation Service, both administered by the Department of Social Security. In addition there is, of course, a variety of State Government assistance.

It is apparent that low vision services, provided by a range of health professionals, operating in a number of different institutional circumstances, receive financial assistance under many of the foregoing funding mechanisms.

I now wish to consider specifically Commonwealth funding of low vision clinics. Clinics operating within recognized hospitals receive Commonwealth and State financial assistance under the hospital cost sharing arrangements. With clinics operating on a fee-for-service basis, their insured clients are eligible to claim health insurance benefits and the Commonwealth medical benefits for services costing in excess of \$20.00 are payable. Of course, bulk-billing procedures are applicable for Pensioner Health Benefit cardholders and uninsured persons classified by their doctors as disadvantaged.

In two cases - those of the Low Vision Clinic of the Association for the Blind here at Kooyong and the Adelaide Clinic of the Royal Society for the Blind of South Australia - more direct Commonwealth assistance is made available under Health Programme Grants. I have already outlined the purpose of these grants. The Commonwealth pays to approved organizations, as an alternative to Commonwealth medical benefits, amounts equivalent to the deficits incurred by these organizations in respect of the provision of approved medical services. All recurrent costs associated with the provision of the medical services are taken into account and the organizations are expected to raise charges for patients other than Pensioner Health Benefits cardholders and uninsured disadvantaged people. Since their introduction in 1975, grants totally nearly \$670,000 have been provided to these low vision clinics.

I would like to also mention another aspect of the Commonwealth involvement in low vision services. In so doing I am aware that I am

moving away from the standard view of low vision needs and services, but I wish to talk about the dramatic findings and results of the National Trachoma and Eye Health Programme carried out by the Royal Australian College of Ophthalmologists, supported financially by the Commonwealth under a Health Programme Grant.

In all, over 100,000 people were screened throughout rural Australia to achieve a large coverage of at-risk groups and communities, to obtain an accurate assessment of the prevalence of trachoma and other diseases and conditions. Special steps were taken to see everyone in those communities who had eye problems requiring specialist care.

Of the 62,000 aboriginals examined, 24,000 or 38% had trachoma. The prevalence was found to increase with age, and almost 69% of those aged 60 or more showed signs of the disease. By contrast, of the 38,000 non-aboriginals examined, only 663 or 1.7% had trachoma, and in the aged population, the figure was 9.5%.

As may be expected from these figures, the number of visually impaired persons in rural Australia is very high. For children under the age of ten, the rate was two in every thousand for both racial groups. Overall, 9 in every thousand non-aboriginals and 38 in every thousand aborigines were visually impaired. For persons aged 60 or more, 166 per thousand non-aborigines and 415 per thousand aborigines were classified as visually impaired.

The Commonwealth Government has funded the Trachoma Programme to the extent of \$2 million. Some 7,000 pairs of spectacles were prescribed, about 1,400 cases were indicated for surgery and more than 4,000 people require regular review. Mass chemotherapy programmes covering 25,000 people have been carried out.

Trachoma is a public health problem, and until the necessary action is taken to wipe out the pools of trachoma infection in rural communities, trachoma will continue to be a substantial cause of avoidable blindness and vision loss in Australia.

I have outlined the current situation in relation to Commonwealth

funding of health services through the Department of Health. But what lies ahead?

In looking to the future more account will need to be taken of a research and development approach with emphasis on the need for evaluation of services.

In addition to providing financial assistance towards the provision of health services, the Commonwealth also provides funds for medical and health services research and evaluation.

Through the National Health and Medical Research Council grants for medical research, the Commonwealth has funded optometric research in low vision. One project resulted in the development of the Logmar vision charts, which provide ultimate flexibility in assessing visual performance, enabling consistent and reliable measures of visual acuity to be recorded to 6/900 and worse. This was a very significant piece of research.

The Commonwealth Department of Health also administers a programme of Health Services Research and Development Grants. These grants are designed to assist in the improvement of the techniques and practice of planning, administration and evaluation of health services. As a general rule, health services research studies are concerned with the financing, organization, staffing, management, quality and efficiency of health care delivery; health services development projects are concerned with the examination, development, promotion and implementation of methods of improving the quality, standard, efficiency and economy of health services in Australia.

The grant schemes are complementary and both schemes are intended to result in the provision of scientifically based information for use in health services decision making. I am pleased to say that an application is currently being considered for research into existing low vision services and the need for these services.

I do not think I can speak on government funding without mentioning the question - how much finance is enough? We are all conscious of the things we are prevented from doing through lack of funds. To put



this matter into some perspective, health care absorbed about 8% of this nation's gross domestic product in 1977/78. This was expenditure of about \$7,300 million and exceeded \$500 per person in this country. Total Commonwealth expenditure on health care in 1977/78 was \$2,690 million.

While many people are suggesting that projects with which they are associated ought to receive additional funds, there are others who suggest that health expenditure is excessive and sometimes contributing very little to the health status of Australians.

In the present economic climate, it is particularly important to make balanced decisions to direct resources to those areas where they can be used more effectively and efficiently and where there are known benefits to be gained. In this connection, it is important for all people involved in the provision of health services to examine their operations, to see whether more effective use can be made of the finance they have available to them. Research and evaluation of existing services and needs for services will become increasingly significant in future decision making in the health services field.

I note with interest that the next speaker will be discussing the evaluation of low vision services and consequently I will not expand on that subject. However, I feel in concluding that I should suggest that it will be important to see research and evaluation not as means of raising expectations for additional resources, but as means for achieving more efficient and effective use of existing resources.



## EVALUATION AND LOW VISION SERVICES

Keith Holdsworth

The word evaluation has been much bandied about in recent times in the health and welfare systems, both at government and non-government levels. Some evidence of this can be seen in the establishment and work of the Australian Council of Social Service (ACOSS) Task Force on Evaluation and Accountability, the support of the Department of Social Security and the National Advisory Council for the Handicapped for evaluation studies, particularly in relation to the use of the Programme Analysis of Service Systems (PASS) method and the publication of the Baume report on evaluation in the Australian health and welfare systems. The media and the public seem to be developing a more critical interest in human service programmes and the publication of the Baume report in particular appeared to stimulate some rather alarmist press comments implying that "millions of welfare dollars have been wasted because government departments who don't know what they are doing have given money to non-government agencies who don't know where they are going" (ACOSS, 1979).

The questioning is not new. Almost ten years ago, Schon was saying that agencies seemed to be unresponsive to the needs of their clients, that the blindness system is self reinforcing and homeostatic and that the lack of data on needs and the effect of services resulted in a lack of evaluation which appeared as though the system wished to protect itself from scrutiny.

Illich's controversial comments on the health care system also indicate a need for better evaluation when he speaks of an automatic assumption in the past that what was being done in the name of medical science was in fact useful.

In addition however, it does seem that there is a growing recognition, heightened by the present world economic downturn, that in these days of more expensive and expanding human services, societies cannot

afford to go on indefinitely ploughing ever greater proportions of government and private expenditure into those services without some better measures of the effectiveness and efficiency of services. So perhaps we should address the question of what is evaluation.

One definition of evaluation (Mullen, 1972) says that it answers the questions, on what basis and to what end, will who, do what to whom, for how long, with what effect, at what cost, and with what benefits? No doubt if we all could regularly answer those questions with accuracy and could then use that information to improve programmes, the matter of evaluation would hardly be an issue.

Much evaluation seems to be concerned with the "how much" sort of questions, but the issues of where, how and why are also considered to be important by the ACOSS Task Force.

Baume speaks of social programme evaluation in terms of a process of thoroughly and critically reviewing the efficiency, effectiveness and appropriateness of any programme or group of programmes. The purpose of evaluation is defined as being to provide evidence on the outcomes of programmes so that planners can make wise decisions about those programmes in the future. So there we have the extension of the "how much" questions to include considerations of appropriateness and outcome, and here I differentiate between output - the action carried out as the result of the programme - and outcome - the effects of the programme on the recipients.

Provus lists five definitions of programme evaluation:

- judgements of authorities about a programme;
- opinions of programme staff;
- opinions of those affected by the programme;
- comparisons of actual programme outcomes with expected programme outcomes;
- comparison of executed programme with its design.

Evaluation then is a matter of measurement of programme activity and results against some form of standard. This is a rather complex task. Is it worth it? Why evaluate?

One set of views on the need for evaluation is concerned with feedback from receivers of services. Baume indicates that evaluation is necessary in order to achieve efficient, effective, rational and equitable health and welfare systems, but there is a social obligation by bodies which accept money from government or from public appeal to be accountable to the public and to accept responsibility for what they do. Further it is suggested that the consequences of not evaluating may include indiscriminate cuts in funds, the continuance of ad hoc decision making and the perpetuation of inadequate systems. Other writers say it is necessary to know whether there has been excessive or insufficient treatment, that the outcomes of interaction of service and client be considered, including such factors as dependence, achievement, satisfaction, cost and adaptation to environment. Knutson sees evaluation as a significant contribution to learning and asks what blindly held assumptions guide our health programmes.

Provus identifies three major organizational needs which evaluation can serve: to ensure product quality, to ensure this quality at minimal cost and to help management decisions about what should be produced and how. In addition, he considers that ways of monitoring and judging new programmes are perhaps necessary before we can build effective new programmes. His view is that there is an intimate relationship between evaluation, research, programme design and programme development, with evaluation being important as a continuous information management process serving programme improvement as well as programme assessment.

The view of evaluation as a process of organizational learning is reinforced by Lyons. Lewis sees a need for evaluation in terms of determining whether those receiving services are in most need of them and whether services are accessible, in an acceptable form, and whether there is adequate awareness of them.

The question seems to be more one of clearly identifying the

objectives of evaluation rather than one of whether to evaluate or not. In some form or another most organizations carry out some form of checking, monitoring or measurement of achievement. However in the minds of some, and perhaps most people, the word evaluation conjures up images of being looked at and criticized, probably by an outsider who doesn't understand the problems. So we should also think about who does the evaluation.

Sax states that it is the function of government to stimulate and develop programmes for the evaluation of new approaches. He later indicates that there should be provision for consumers to determine and monitor standards in relevant matters, such as waiting periods and the availability of night time care, but that professionals should review diagnoses and treatments.

In part, Illich offers a contrary view when he says that self evaluation may produce an impediment to evaluating what its work actually contributes to patients, and that evaluation could be done more effectively by informed clients than by the peers of professionals. The possibility of the confirmation of error rather than its identification, when two judges view the same situation from the same background of value and experiences, is raised by Knutson, writing prior to Illich.

Within the Australian situation, there seems to be some evidence that neither government or non-government agencies are particularly skilled in the development of evaluation programmes. The same source comments that non-government agencies may not be so reluctant to evaluate their programmes as has been suggested. Such reluctance as does exist may be through unrecognized reasons, such as the high cost of evaluation on time and resources, the difficulties of transferring evaluative practices from other industries and sectors, the necessity to justify the spending of public funds to a community which has only an uneasy acceptance of the practice of evaluation. In addition, programme evaluation must compete with the primary priority of most welfare agencies, that of service delivery.

Evaluation may well therefore need the objectiveness of the uninvolved, the skill and knowledge of the service providers, and the direct



experience of the recipients of service, depending upon what aspect of an organization's activity is to be considered. For example, evaluation may be concerned with the input into an organization, that is the resources used, the activities of the organization, that is the services provided, and the organization's activities. Or it may be concerned with the output and outcomes of the interaction of resources and activity.

In considering the establishment of an evaluation programme, the most significant requirements are for a genuine commitment by the organization to an unbiased evaluation, a clear statement of the goals of the service or programme, a statement of what is to happen to the results of the evaluation, an allocation of resources to the evaluation project and a commitment to acting upon the results.

Mullen suggests that the participants must be prepared to put professional reputations on the line and says that in evaluation one must be prepared for tension, anxiety, defensiveness and resistance. The threatening potential of evaluation is supported by Combs et al when they ask who has not been threatened by some evaluation, made in good faith, by well meaning outsiders, whose only thought was to spur us onward and upward? Many different frames of reference are likely to be present in any group brought together to work on a problem, plan a programme, or evaluate projects. Different members exposed to the same experience and data will react in contrary ways.

The establishment of an evaluation aimed at measuring the effectiveness of health services is undertaken assessing its outcomes in terms of health and satisfaction. It is different from the appraisal of organizational structure or the activities of health professionals. Perhaps one of the most succinct comments on evaluation establishment comes from Provus, when he says that programme evaluation involves every aspect of the programme, not just the outcomes, therefore it needs a detailed picture of the entire programme as a standard. The programme standards are derived from the values of the programme staff and the client population it serves. Situational factors influencing the product should be identified and taken into account. Process and product evaluation are interdependent.



So far, this paper has briefly reviewed some of the current discussion about evaluation. To avoid a charge of further contributing to the literature without discussing how evaluation is done, it is perhaps appropriate to quickly review some evaluation models and then consider in greater depth one model which may be useful for the evaluation of low vision services.

Earlier in this paper comment was made on the PASS evaluation method. PASS is a procedure for the objective measurement of the quality of a wide range of human management service projects, systems and agencies. It is based on a number of ideological or value systems, the most important of which is the principle of normalization, which it breaks down into practical implications for service delivery.

Normalization is the "utilization of means which are as culturally normative as possible in order to establish and/or maintain personal behaviours and characteristics which are culturally as normal as possible" (Department of Social Security, 1979).

The PASS system utilizes an identified list of elements considered essential for residential establishments, which includes such items as access, programme and neighbourhood harmony, programme location and location names, socially integrative social activities, labels and forms of address, physical/social overprotection and utilization of genetic resources. Check lists for the scoring of about fifty ratings for sheltered workshops and residencies are also established, with descriptive statements such as access - the extent to which access to and from the facility is fast, safe and convenient for the clients and public; and programme facility and location names - the extent to which the name of the programme facility or location enhances the image of the clients in the eyes of the neighbouring community.

A more detailed description of an evaluation using this system is documented in Berry, Andrews and Elkins. Evaluations using PASS are carried out by an independent assessment team, with data gathered from ratings and scores allocated. A total score from each facility may range from minus nine hundred and forty seven to plus one thousand.

While the PASS system appears to have been used mainly for the

evaluation of service systems for the intellectually handicapped, and it should be noted that it does not measure outcomes, it may be able to be adapted to meet the needs of the evaluation of some rehabilitation and low vision services.

Results Orientated Social Services Evaluation (ROSSE) is an organization centred approach to the delivery and review of service programmes. It involves the specification of clear objectives for the programme and the establishment of result measurement criteria. The method involves the relationship between planning, organizing and evaluating by identifying the problem to be attacked, determining the activity designed to positively affect the problem and assessing what results were achieved from the activities. Three types of objectives are defined: operating (the broad intent), production (detailed activities) and impact (outcomes).

Developing quantitative measures of objectives is obviously necessary and equally obviously not easy. Words such as benefit, appropriate and satisfactory have to be clarified into observable terms and the proponents of the model suggest that quantitative measures of change should involve a comparison of a target group, that is the population to which the services are directed, with the impact group, that is those members of the target group who have received the services. This relationship may be given as a ratio. The authors caution against automatic assumptions that outcomes are due solely to a particular programme and suggest both interperiodic and interagency comparisons also be made.

As with most evaluation programmes, ROSSE is said to work best when those responsible are self-motivated, as self-corrective action is then most likely to occur.

Achievement of objectives in itself is not necessarily the most important criterion of success. The objectives may have been reached, but at too high cost in resource usage, or the objectives themselves may not be highly valued. The authors see the process of evaluation as being a continuous revision of objectives, activities and resource allocation, with the results of the evaluation being fed back into programme design and programme implementation as an ongoing process

of adjustment.

Evaluation in the field of education started to become evident in the 50's and 60's. With this amount of experience, it may well be that educational evaluation models have something to offer to the health and welfare scene.

The traditional measurement based model is not appropriate in all situations and Batten describes one method using a different approach. It involved a large scale independent evaluation of three programmes in 1976, concerning educational innovations, disadvantaged schools and development programmes. Considering the diversity and range of the activities and staff availability, it was decided that an approach would need to be one of subjective, descriptive interpretation rather than one of objective and statistical measurement. Interviews and questionnaires were used and documentary and background information collected. An overall objective was the gathering of information on the perception, organization and effect of a teacher development programme. This was described as an illuminative evaluation model and illustrates yet another approach to evaluation.

Some types of evaluation are extremely difficult, for example those involving social, ethical, moral and economic, as well as medical types of decisions. Low vision issues may well be at a less dramatic level, but in practice it does seem different for many in blindness agencies and perhaps in the eye care professions to say to a patient: "There is nothing more that I can do." That in itself may be a form of evaluation in terms of likely outcome, that is our treatment objective is likely to be achieved. It may be a question of the use of resources - would those resources be more effectively used for another patient - or perhaps one of process, that is, what procedures am I now going to use with this patient, including pertinently, what am I going to say?

The objectives of evaluation of different areas have many similarities and basically concern the process of delineating, obtaining and providing useful information for judging decision alternatives. Evaluation can be both pro-active, that is, with the objective of serving the decision makers, or retro-active, that is, serving the



question of accountability. In other terms, it can be formative or summative. In practice, evaluations are likely to include both approaches; the objective may be to have information about goal achievement, but this is often of limited value without more information about the process and product or output. Each method needs to involve programme description, knowledge of resources used, the establishment of clearly stated objectives and the comparison of the outcome with some form of standard. One evaluation model which sets out in step by step form the way of achieving this is the Discrepancy Evaluation Model, designed for educational programmes but capable of modification for rehabilitation and perhaps also for low vision services. It is this model which I will now examine in somewhat greater detail.

A Discrepancy Evaluation Model defines the evaluation as the comparison of what is a performance (P) to an expectation of what should be a standard (S). If a difference is found to exist between the standard and the performance, this difference is known as a discrepancy (D). Discrepancies may be positive or negative. Negative discrepancies may be resolved in three ways: an inappropriate standard may be reformulated, there may be greater control over performance, or a programme may be ended.

We have already seen that for evaluation, standards are essential. Standards are usually derived from experience, knowledge and values, with values often being the most important. This model adapts the techniques of systems analysis and constructs the standard by defining the intent of the programme utilizing descriptions of inputs, processes and outputs. This standard is known as a programme design which, once it has been judged adequate and validated by the programme staff, becomes the standard against which subsequent programme performance may be compared.

Rarely can management afford to conduct input process and output evaluation for all aspects of their programme. Thus it is necessary to construct an evaluation plan which selects priority aspects of programme operation which will be subject to evaluation. Such a plan should identify the areas of evaluation concern, and formulate evaluation questions which direct the identification and collection of

performance information. The plan also clarifies standards, selects measurement devices and plans the evaluation activity.

The first stage in the procedure is to establish the programme design. This is done in a series of levels, each considering the organization's activities in increasing detail. At each level the inputs, processes and outputs are described. Usually an evaluation can take place by taking the design analysis to the third or fourth level of description.

For example, at the first level, the relationship of the programme to its environment is established. This level gives a brief description of the major systems which utilize the programme outputs, together with a brief description of the programme processes. The second level breaks down the programme into its principal parts and a level three analysis further magnifies programme operations by breaking each component identified at level two into sub-components. This analysis process can continue indefinitely or until an appropriate level of detail has been reached.

Each level of analysis requires the production of two types of documents, a network and an input-process-output description. For each component or sub-component identified in a design network, there should be a corresponding process statement accompanied by appropriate inputs and outputs.

Thus at level one for a low vision clinic operation, the resource system used may include such items as the parent agency, the Colleges of Ophthalmology and Optometry, staff training sources, visually impaired clients and funding sources. Consumer systems may include visually impaired people, the families of such people, other agencies in allied fields and, in an educational capacity, the public at large.

The input-process-output description for this first level may include such items as funding, staff, receptors, facilities, liaison and pre-conditions. Items under these headings could be funding, \$3000, State Department of Health - 65%, parent agency - 20%, public donation - 5%, research grants - 10%; staff, one ophthalmologist (part-time),



two optometrists (part-time), one clinic manager, one occupational therapist, one orientation and mobility instructor, one social worker, two secretaries; receptors, three hundred low vision clients per annum, families of clients, public at large (education), ophthalmological students, optometrical students. A pre-condition might be a state wide demand by visually impaired people for low vision services.

The process description at this level might look something like this: "The X Low Vision Clinic offers a comprehensive assessment of individual visual impairment and visual capabilities. It provides low vision aids with the objective of maximizing visual ability together with training and follow-up in the use of these. The clinic acts as a resource for allied rehabilitation services including counselling, occupational therapy, orientation and mobility training and employment assistance. The clinic provides a public education service concerning low vision, professional education and training concerning low vision services, together with research into causes, effects and prevention of low vision. The clinic recognizes the importance of counselling and supportive services to the families of its clients and acts as a resource and placement facility for the students from the College of Ophthalmology and Optometry".

The output at level one might read: "The X Low Vision Clinic assists visually impaired clients to develop improved personal confidence in managing the social, vocational, recreational and personal aspects of their lives. The clinic accepts as an overall service objective the need for each client to be able to live comfortably within the community at the maximum personal independence and confidence according to individual goals. The clinic produces significant research in the functional implications of low vision conditions and provides a variety of resource services to agencies, organizations and individuals in the health and welfare fields".

At the second level of analysis, the low vision clinic activities are broken down into its principal components. Such components might be assessment, prescription and training, supplementary services, public and professional education and resource services. For each of these components, input, process and output descriptions are prepared

identifying more detailed break up of the usage of resources such as funds and staff time, more detailed description of the process involved in each component and a statement of the component output. For example, the assessment output might read: "Having established the client's ophthalmological, optometrical, social and functioning needs, the client moves into the aid prescription training programme on the basis of an individual, written low vision service programme".

At level three, each of the components at level two are further broken down into sub-components. For example, the component supplementary services may be broken down into orientation and mobility training, occupational therapy, employment assistance and counselling.

At level four, each of these sub-components would be similarly described in terms of input, process and output. For example, the output in the counselling sub-component might read: "This section of the clinic activities provides clients with counselling support throughout the clients' period of contact with the clinic. The section helps to solve problems which the client may have of a personal, family, training, vocational or other nature. Clients' personal problems are ameliorated or solved, programme plan, programme practice and client needs are matched. Clients are assured of supportive assistance. Staff are supported to enable the most appropriate client relations and staff client interaction to take place".

In this way a complete programme design is built up to the desired level.

The first stage of evaluation has been identified as design evaluation. In this, the adequacy of the design is assessed by the use of check lists for theoretical validity, external compatibility and face validity. And as in each stage, the evaluation concerns are established, in this case the design adequacy and evaluation questions framed, for example, is the design comprehensive, has the design internal consistency and is the design valid? Measurement variables are then identified for each of the questions, for example the question on internal consistency might include as variables

activities, objectives, functional relationships and resource usage. The validity of the design might have as variables staff, expert, client and community judgements. Measurement procedures are established which the design details are compared with, the check list and the design submitted to expert and concerned opinion. Measurement instruments are established including the programme design check list and perhaps the use of an expert review in a community forum.

Additional evaluation concerns may be identified, such as the effectiveness of services and again evaluation questions prepared to address those concerns, measurement variables identified, measurement procedures established, measurement instruments either identified or prepared in each case.

A measurement planning matrix can then be established in order to more readily see which measurement procedures or instruments are likely to be most effective in yielding the desired information and which evaluation concerns and evaluation questions can most practically be considered in terms of priority and resource usage.

All of this may sound complicated, but it is worthwhile bearing in mind that human service programmes today tend to be complex, using sophisticated equipment and expensive professional services. Evaluation of services and programmes is necessarily more complex, requiring more detailed and relevant information and better measurement procedures. Perhaps above all, an approach to evaluation should be an important organizational commitment, it should be structured to allow the participation of those concerned with the conduct and effect of the programme and it should also imply a commitment to programme improvement.

These comments on the discrepancy evaluation model have of necessity been brief. A two day workshop is a more usual and appropriate introduction. The model has been used with good effect in educational programmes and it is this writer's contention that it offers a workable and meaningful evaluation option for low vision services.

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## REVIEW OF SESSION

Bruce Ford

I have a great mass of notes in front of me, and out of these notes I have three main issues: what it feels like to be visually impaired; who is going to pay for services; and how are we going to prove that these services are all worthwhile.

Even though Dorothy Judd and John Blanch were not the first speakers, I put them first because I thought they really pulled us down to reality. Dorothy Judd told us of the feelings she had, the feelings of isolation, confusion, uncertainty and depression; John Blanch told us about the real losses, the practical losses like not being able to read or drive a car, the difficulties in orientating oneself round one's own home and the need for companionship.

Listening to these speakers, I realize that the inexperienced young doctors who work with me are deprived. They have been trained for seven or eight years in an atmosphere that concentrates on the causes of disability and loss of function. The consequences of loss of function are hardly ever mentioned. They don't find that out until they get into the real world and listen to some of the Dorothy Judds and John Blanchs; some of them never learn it at all. They can become encapsulated in their diagnostic, problem-solving role because it is less threatening, less frightening than having to listen to people telling you what it really feels like.

I am concerned about my profession - the medical practitioners. I am concerned about its ability to deliver the goods, because very often it fails to do so. John Blanch was referred to the Low Vision Clinic by an ophthalmologist, but I know a lot of ophthalmologists in Melbourne who don't know that there is such a thing as a low vision clinic. We must contact them and tell them, even if they worry about what it will do to their professional relationship with their patients, and similar kinds of issues.

I couldn't agree more with Dr. Terry Davidson's complaint about disability being described in terms of percentages. I have been in the rehabilitation field for fifteen, nearly twenty years now, and I never know what a lawyer means when he says that someone is "85% disabled" for work because he has a bad back. Not only is it meaningless, but it is devious and tends to turn all these personal and family feelings of loss into something you can write as a figure. It does what my young doctors do - it retreats from the real issues and puts up a number. This is a phony form of evaluation.

We then continued with Sidney Sax and Peter Callanan, who told us how services would or would not be provided. These speakers have my greatest respect, but what they were really saying is: "Don't blame us, we don't do it, we just give them the money". The people who do it are the States, private enterprises, voluntary organizations and health insurance funds, except for a few minor programmes like the Community Health Programme and the Nursing Home Assistance Act. I wonder why we are lobbying the Commonwealth Government. I wonder why we don't have Mr. Borthwick, the State Minister for Health here, because the State Government spends the money.

Sidney Sax made the point that you should try and make the bureaucracy able to react more sensibly, sensitively and rationally to the problems of people. He has been trying to do this for many years. But this is difficult in practice, because once you start reacting sensibly and rationally, you start having to listen to people's demands, something that politicians do not want to hear in an economic climate of restraint and recession.

The Australian Assistance Plan, a way of people telling government what they want, has been discontinued. I am a little cynical about the willingness of the Commonwealth Government, and I am not referring to its good bureaucrats we have at this conference, but to the Commonwealth Government on both sides of Parliament House. I don't think it would change significantly if the opposition were in government. I think that Malcolm Fraser has succeeded in his policies of New Federalism and I think we should recognize that the consumer must now start lobbying the States. We have been so used to lobbying the Commonwealth that it is taking us a long time to realize that the

power has shifted.

Finally, Keith Holdsworth told us how we are going to prove that it is worthwhile. I am used to hearing people talking about evaluation, or "peer review" as it is known in the medical profession. We have been talking and writing papers about it for years on the utmost level of abstract thinking, but no one ever tells us how to do it! Keith Holdsworth came closer than most. He began to show us at least an organizational, descriptive design, but he still didn't come to the issues that we all have to face if we are going to do evaluations. If we are going to ask the consumer if it is worthwhile, we have to start to measure things like satisfaction, contentment, self-respect and happiness - the outcomes of our services.

In evaluation, we are experimenting in methodology. We do not have any method of evaluation, we don't know how to do it, we haven't talked enough about it and there is no science of the practice of evaluation. We will get there, however, because the human race is ingenious in thinking of new ways. But we must start and we must not be ashamed if our first efforts are unsophisticated and simple. If we are going to be funded by the Government, we must come down to earth and present some well-researched facts.

## AN AFTER-DINNER SPEECH

Samuel Harris Baker

*Entitled*

*A Somewhat Sketchy Account of My Harrowing Voyage From Sight to Blindness and Back Again to Sight, and How I "Invented" Certain Devices of Great Importance to Those Residually-Sighted Blind People Whose Remaining Vision Can Be Very Easily Enhanced By Means of Appropriate Low Vision Aids, and of How, Much to My Chagrin, I Learned That My "Inventions" Had Already Been Invented Long Ago and Were Common Knowledge to a Growing Handful of Dedicated Men and Women Who Come From Many Unrelated Disciplines and End Up Being Vaguely Referred to As Experts in Low Vision Aids.*

I know a great deal about the tragedy of being blind, but I do not know any more about it than my 30,000 blind Australian brethren. However, I and probably a couple of hundred friends (most of whom I have never even met) living all over the world, (mostly in the United States) know a great deal more than most people about the almost concealed fact that over 90% of the blind have some residual vision.

The sight of most people with residual vision can be greatly enhanced by simply providing them with appropriate low vision aids and special training in their use.

You want proof? Look at me. I am legally blind. I am seventy-eight. I have a rotten, thirty year ocular history. Retinal detachments, glaucoma, macular degeneration, etc. Right eye; light perceptive - I can see the difference between night and day. Left eye; with best correction, 6/420 - this means that what I can see at 6 metres you can see at 420 metres. I cannot read or write because of my low vision.

Isn't that a hell-of-a-picture? But if you promise not to tell anyone, I will let you in on a wonderful secret. I am not only blind



- I am also sighted. I am willing to concede that without my low vision aids, I am what the authorities call "blind", but give me my low vision aids and I can see the world. I can see whatever you can see. The great difference is that you can see without effort - I have to work at it.

Mentioning the word "effort" reminds me that it is about time to demonstrate how easy it is for me to see you.

I shall assume that you are looking at me, that you see me. I am looking at you. There is a great difference, though, in what each of us sees. You see me quite clearly, without effort. I, though looking directly at you, cannot see you at all. I cannot see the fingers on my outstretched hand, let alone see you. I cannot see you because without my aids I am blind - but look! I bring this monocular to my 6/420 eyes - and presto! I now see your faces much more clearly, probably, than you see mine. I remove my monocular - I cannot see you - I am blind. I return the monocular to my eye - and I see you again. I see you again because I am sighted. I am, at worst, a sighted-blind person.

One day, long before I had learned of low vision aids, a nice lady came to my office and introduced herself as my social worker. She asked me a lot of biographical questions, then suddenly interrupting herself, she said: "Mr Baker, you are entitled to an extra \$1500 tax deduction annually."

"That is the nicest thing I have ever heard, but what noble or heroic thing have I done to deserve a \$1500 tax deduction?"

"Because you are blind."

"Goddam you, I am not blind. You're blind. Can't you see that I can see?" I grabbed her hand and brought it close to my eyes. "Look, I can see your hand holding a pen; you're wearing a wrist watch." I raised my head. "Look I can see your face, your eyes, your nose ..."

"Mr. Baker, let me go, you're hurting me. That's better. Listen to me. What you see from a couple of inches away doesn't count. If you



could see my watch or my face ten feet away, that would be okay. But a couple of inches away - you call that seeing? You're crazy, Mr. Baker. Look, see this file? Look how thick it is. Everything here says you're blind. You're own ophthalmologist says you're blind. The ophthalmologist at the Institute for the Blind says you're blind. I have a free subway pass here for you - free because you're blind. The Government and the Income Tax Department say you're blind - that's why you're getting the \$1500 goodie - I think you're very lucky. Surely you're not going to argue with all these authorities that you're not blind when they say you are. Do you think you know more than they do?"

That is how I learned that I was, officially, blind.

Some time ago, I was a guest speaker at a conference in the United States. Following upon my introduction, I looked upon my audience through my monocular. There, right in the middle of my lens, just about fifty feet away, was that nice social worker who was the first to irrefutably inform me that I was blind. I held my view of her in my lens without moving. She realized I had recognized her. She seemed embarrassed. She slowly raised her hand to the side of her face and shyly waved recognition to me. I think I saw a watch upon her wrist. I waved back to her. I was glad that she was not angry at me just because I could see her.

I am beardless. To remain so I must shave every morning. Since I am unable to engage in the pleasure of perusing my face while shaving, I concentrate, instead, on the news coming from my radio.

One morning I learned that on the following evening there was to be a show on television of nothing less than the glorious Bolshoi ballet doing Swan Lake. We were on good terms that week with the Russians. The film was part of a cultural exchange.

I was really excited. I am very fond of ballet. I told my wife about the coming event and she thought it would be a good idea to have our children and grandchildren come to dinner and enjoy the ballet together. She arranged a very special dinner - all Russian - borsht, blintzes, shiskabob, etc. It was fun. At last we all retired to my

den to see the fabulous Bolshoi. I was seated behind a sort of console table. The television was about three feet away. The rest of the family sat wherever they wanted to.

"There they are Gran'pa", Jordy said.

"Yes, there they are, my child".

We all gazed upon the Bolshoi doing Swan Lake. Everyone gazed in awe - except me. I could not see what I was looking at. In our contagious enthusiasm we had all forgotten that I was blind. Everyone had forgotten that I had not been able to see television for a long time. I occasionally listened to television but I could not see it. The family knew that. I knew it. How could we have forgotten? I felt bitter and angry. I felt sick and embarrassed. I swept my hands around the top of the table trying to find something to do that would conceal my bitterness, my embarrassment. I reached for the drawer of the table. I opened it and pretended to busy myself fingering around its emptiness - it wasn't really empty, there were a few elastic bands, paper clips, half-empty match boxes, pencil stubs and, at the very back of the drawer I felt and found my "birthday-binocs", my old birthday-binocs.

I was born in Glasgow, Scotland. It was then the greatest shipbuilding centre of the world. Glasgow is on the River Clyde. There are thirty-two bridges that cross the Clyde in Glasgow. By the time I was eight I had crossed every one of those thirty-two bridges. The bridges I liked best were those from which I could best see the shipyards. I loved the bridges and the shipyards and, above all, I loved the ships that were born there. A thousand times I dreamed that someday I would build ships that were even more beautiful than those that I was then in love with. My mother knew of my obsessive passion so, for my eighth birthday, she bought me binoculars (from then on I called them my birthday-binocs). What more fitting for the lover of ships and of the sea than binoculars? They were wonderful - and tawdry, but what can you expect for half-a-crown? They expanded my horizon despite their wretched optics. I not only saw all that was before me, I also saw things that didn't even exist. What a magical toy. Toy?

I examined my birthday-binocs with my fingers. The lenses were grazed and cracked. The paint on the barrels had almost all peeled away. Poor, sad binocs! I felt a lump in my throat. I was eight years old when I first put them to my eyes - I am now almost eighty. I picked up the binocs and put them to my eyes. What else does one do with binocs but put them to one's eyes? I focused them on the television. You have to focus on something. You can't focus on nothing. So I focused the binocs on the television. And on that television Swan Lake was being performed by the Bolshoi. I saw their grace and their beauty and I wept and wept to the very end of the performance. That was my first low vision "discovery".

Actually, I had not "discovered" anything new. Telescopes and binoculars have been around a long time. The unique thing about my experience was that my binocs were capable of picking up a clear image at three feet, whereas all conventional binoculars are designed to see things at not less than ten or fifteen feet. They are intended for distant things, not near ones. Because of the happy accident that my binocs were so shabby, so tawdry, so sleezy, so defective, their range was from "infinity" (about one hundred feet away) to about three feet. Thank God for my wretched, defective birthday-binocs!

It was just a matter now of having someone design a quality binocular that would have the same marvellous characteristics of my wonderful, miserable birthday-binocs. I also now knew that I would have to get busy and find something that would enable me to see from "zero" to three feet. I had mastered seeing things from three feet on (distant objects). Now I had to find out how to see a book (near objects). To be able to see distant objects is to see the world; to be able to see books is to know the world. The idea of how to see near objects struck me almost as quickly as I thought of it. It was so easy, so obvious!

Within a few days of my binoc-television episode, I purchased a close-up camera lens to which I attached a short piece of clear plastic tubing. I then attached them to one of the extended barrels of my binocs. That is all there was to it. I had built my first stand magnifier.

I placed an open book upon my table. I trembled as I placed the magnifier on the middle of the page. I rested my residually-sighted eye on the ocular lens. I looked and saw three letters. I knew that the three letters were not a word, they were part of a word. The power of my magnifier was so great that my field of view was, consequently, very narrow. The most I could see was three huge letters - o-v-e. I jiggled the magnifier just a little bit to the left. I now saw another arrangement of three huge letters - l-o-v-. And then I realized that I was looking, for the first time in years, with my own eyes - and a stand magnifier - at the most beautiful four-letter word in the English language - l o v e. That word was in the middle of a line of poetry that has probably been spoken by everyone who speaks or has spoken English, long before it was written down by Elizabeth Barrett Browning in the 43rd of her Sonnets From The Portuguese: "How do I love thee? Let me count the ways."

I had made my second low vision aid "discovery". I could now see all things - near and far.

From then on it was easy sailing, particularly in view of the fact that there are dozens of aids available, including those that I "invented" some twenty years or so after someone else had invented them. What a pity it is that none of the eye doctors I met had apparently ever heard of low vision aids!

My family created a Foundation. I am its director. The Samuel Harris Baker Foundation is a registered charitable institution dedicated to enhancing the sight of the low visioned and residually sighted legally blind by means of appropriate, non-prescription low vision aids and training in the use of same.

We stock practically every ready-made aid available so that quick delivery can be made to those who require them. We design and fabricate special aids for special functions, especially for work situations. We train teachers who train the low visioned how to best use our aids. Our "aids" include various types of holders, heatless lamps, elevating tables, chairs, etc. There is no charge for our services, aids are sold at retail price. Arrangements are made to provide aids free of charge to persons on welfare. In brief, we are



set up to do anything and everything required to enhance the sight of the low visioned by means of aids and training. We will also assist other agencies to our utmost, who wish to do what we are doing.

In a few days most of us will have returned to our various posts all over the world but, as far as I am concerned, we shall not be separated. My door shall be open always to you. This conference has been, for me, one of the most exhilarating and fruitful meetings of my low vision life. It has served as a model catalyst for all those of us who, to paraphrase Hamlet, keep on saying to themselves "To see, or not to see, that is the question".

Good night, dear friends. Au'voir, auf wiedersehn, I'll be seein' you.





IMPROVING THE QUALITY OF  
LOW VISION CARE



## THE LOW VISION TEAM: ROLES AND RESPONSIBILITIES

Alan W. Johnston

In discussing the roles and responsibilities of members of the low vision team, I will be basing my comments on the team approach taken at the Low Vision Clinic operated by the Association for the Blind at the H.M. Lightfoot Centre at Kooyong, Victoria. There are many possible approaches to the delivery of low vision care, but in most instances the mode of care delivery and the emphasis of a particular clinic is historically based in the origins and prejudices of the parent agency, rather than in a deliberate philosophy of low vision care *per se*. For example, one would not expect those low vision clinics operated by a public hospital, a blindness agency or a school of optometry to be identical in their original aims, their organization or their management. Although acknowledging these basic differences, we recognize that there must be certain elements of patient care within a low vision clinic that are essential if an adequate level of service is to be provided. The purpose of this paper is to identify those elements of clinic operation we believe are necessary for the provision of a total low vision care service.

The historical origins of the Kooyong clinic lie in the imaginations and progressive attitudes of the three men responsible for its inception - the Executive Director of the Association for the Blind, Mr. John W. Wilson, Professor Gerard W. Crock of the University of Melbourne, Department of Ophthalmology and Professor Barry L. Cole, Director of the Victorian College of Optometry and Chairman of the Department of Optometry, University of Melbourne. It was the collective vision and cooperative goodwill of these men which saw this low vision clinic first open its doors in 1972, with an ophthalmic nursing sister as its full-time administrator, and ophthalmic services provided on a sessional basis by the Department of Ophthalmology and the Victorian College of Optometry. Additional services were provided by a mobility instructor and an occupational

therapist, both of whom were employed at the Association's rehabilitation centre. Social welfare advice was sought from the Association's own staff of social workers and welfare officers. In time, with the continued expansion of the clinic, it became necessary to base these services in the clinic itself, with the advantages for the patient of easier access to assistance and better liaison and follow-up of routines of patient care. Since those early days in 1972, the clinic has outgrown its original premises and a new clinic facility has been built. This was occupied in 1976. Now some 750 new patients are examined and 2,500 review visits are scheduled annually (Johnston, 1978).

The low vision clinic is operated by the Association for the Blind acting in a role of coordinator of services, providing those management and administrative skills required, and the non-ophthalmic elements of patient care. A schematic representation of clinic organization is given in Figure 1.(p.250) which suggests that the first member of the low vision team is the agency itself, fulfilling the all important "umbrella" role under which patient care is provided. The University Departments of Ophthalmology and Optometry also have roles as providers of clinical staff whose expertise is adequate in the management of their respective clinical disciplines. One of their responsibilities is the prosecution of clinical research in the diagnosis and management of disease and disorders of vision, and the techniques of assessing visual function, evaluating optical aids and prescribing those most appropriate for visual rehabilitation.

In Figure 1, I have divided the clinic operation into three major areas, each represented by a separate "box", although quite obviously these areas overlap and interact as they must do if the clinic is to operate at all effectively. These areas can be identified as:

- . management and administration;
- . ophthalmic services;
- . patient welfare services.



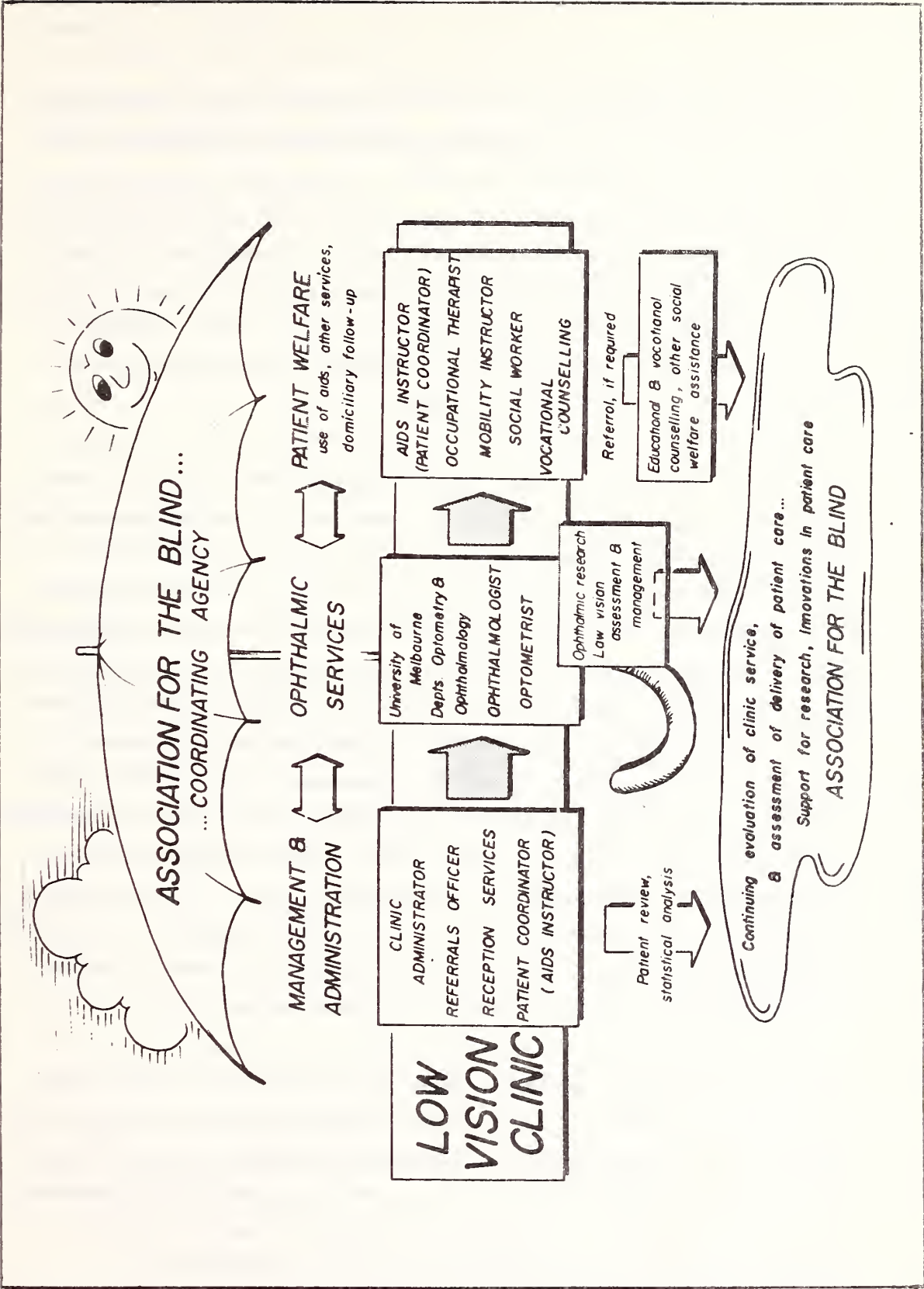


Figure 1: The role of the Association for the Blind in coordinating the operation of the Low Vision Clinic.

## Management and Administration

The *clinic administrator* has a role of organizing and coordinating all clinic services and implementing the policy decisions of the Association and the model of patient care decided collectively by clinic staff to be the most efficient method for their provision of services. Her responsibilities are to the Association, to the staff and to the patients, to ensure that the highest level of care is maintained. She has overall control of the daily operation of the clinic, and provides the liaison between clinic staff and visiting ophthalmic consultants.

She is assisted in this role by the *clinic referral officer*, who has a "data gathering" role. It is essential that patients present with adequate data regarding an existing eye condition and any previous treatment. The referral officer has a duty to ensure that professional etiquette is maintained and that wherever possible, patients attend the clinic with the full knowledge of their private ophthalmologist or optometrist. In those instances when patients seek an appointment at the low vision clinic without a history of ophthalmic investigation or treatment elsewhere, she advises them to obtain a referral to the clinic, so that unnecessary appointments are not arranged for people whose vision can be corrected to a normal acuity. Her close contact with other health care services enables sensible appointment times to be coordinated for the elderly or frail patient who requires other hospital appointments and may need ambulance or other voluntary transport to the clinic.

*Reception services* provide a welcome for new patients and as the first point of contact, they are the "cover" by which our "book" is judged. A friendly welcome is necessary to put a patient at ease and volunteer helpers continue the welcome by providing refreshments for waiting patients. Attention to detail is appreciated by patients requiring review appointments and coordination of appointment times with the other demands on a patient's time is essential. Reception staff maintain a file of patient records and attend to the referral and report forms necessary at the time of patient discharge. We tend to forget about the discharge of patients

from the clinic, but this function must be handled with the same empathy as reception, to ensure that any patient - whether assisted by the clinic with low vision aids or not - has the confidence to approach the clinic again should there be a change in his visual condition requiring reassessment of aids.

The fourth member of our management and administration team is the *patient coordinator*. Usually, this person is an ophthalmic nursing sister and her role is to interview the patient to determine the personal, family and ocular background and to identify the patient's particular difficulties with respect to vision in certain key areas such as reading, mobility, activities of daily living and vocation. It is at this time that an early assessment of a patient's disability and handicap is made by a member of staff skilled in the technique of interviewing. She pays particular attention to the patient's own idea of his difficulties and establishes the expectations of the course of investigation and management upon which he is about to embark. In some instances it is necessary to modify these expectations, which can be either over-expectant or unrealistically pessimistic. This task might be begun by the patient coordinator, to be followed up by the particular team member whose area of expertise relates most directly to the patient's main problem. She has a duty to set up a profile of the patient and establish a tentative format for the manner in which the programme of management might proceed. She gives her name to the patient so that any telephone or other enquiry can be referred to her for prompt and informed attention. Within the clinic she is the patient advocate; she reviews his examination and management and may question any consultant regarding the appropriateness of a decision. Her responsibility is to ensure that the patient has full access to the range of services offered by our clinic, the Association, or any other agency or service whose care is complimentary to that which we offer at the clinic.

#### Ophthalmic Services

After the initial interview, the patient is examined by the *clinic ophthalmologist* whose responsibility is to provide a full professional

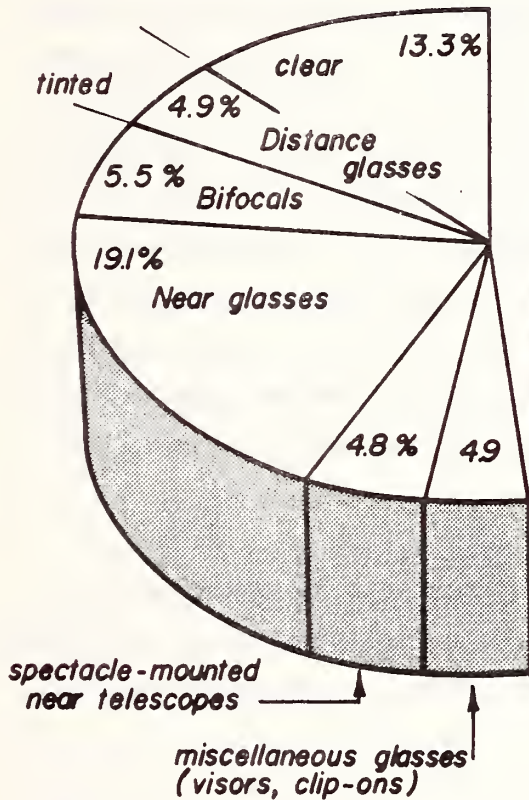
examination and ensure that all the medical options in diagnosis and treatment have been made available to the patient. The ophthalmologist's association with the University Department ensures that the latest available treatment possibilities might be considered. The patient who was told a decade ago that ".... nothing more can be done" and subsequently has withdrawn from regular ophthalmological review has the opportunity to review that diagnosis and, if appropriate, return for treatment from his private ophthalmologist or hospital clinic. The ophthalmologist also has a responsibility to explain to the patient the meaning of his diagnosis and spell out gently his prognosis for continued visual function. Photographs of the patient's ocular fundus might be taken during cycloplegia and some tests of visual function might also be performed at this time.

The *optometrist* provides an assessment of visual function in terms of visual acuity, visual fields, reading fluency and contrast sensitivity. His role is one of providing optical and other aids to enable a patient to meet his functional potential. The first step in this process might be to provide the patient with a pair of spectacles to correct his refractive error and give him the best possible resolving power. Over half of the optical aids provided by the clinic are conventional spectacle prescriptions (Figure 2, p.254). The optometrist investigates the patient's use of distance and near spectacle aids, distance and near telescopic magnifiers and near hand and stand magnifiers. Some of these aids may be ergonomically satisfactory for one task but unsatisfactory for another, so several aids might be required. The essential consideration in prescribing a particular aid is whether or not it can be used for the task for which the patient requires it. An auxiliary aid used in conjunction with magnifying (high near addition) spectacles is a reading stand, to enable a patient to support reading material at a close viewing distance and free both hands for typing or writing (Johnston, 1979). Optometrists work in close cooperation with the clinic's occupational therapist to monitor the usability of aids at work or home.



## LOW VISION AIDS PRESCRIBED 1979

### SPECTACLE AIDS 52.5 %



### EX STOCK AIDS 47.5 %

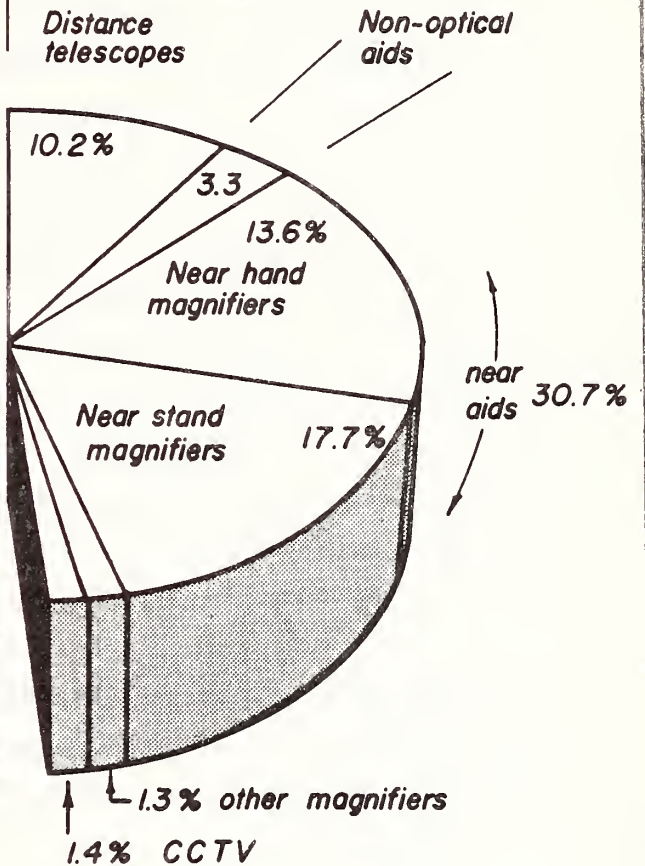


Figure 2: Low vision aids prescribed in 1979. This figure demonstrates the distribution of low vision aids prescribed for patients who attended the Low Vision Clinic. Note that near aids - near glasses, near hand and stand magnifiers comprise about 50% of aids. Spectacle aids - distance, near and bifocal glasses also account for about 50% of aids prescribed.



For some patients the optometrist is seen as the principal practitioner, often because the major ophthalmological service is being provided elsewhere. The patient may attend an eye hospital or private ophthalmological practice and this is the point of referral from a system of very involved ophthalmological attention. Other patients have been conditioned to think of the optical aid as a panacea to restore their lost visual function, either by their friends who have attended the low vision clinic or by their referring practitioner. The optometrist has a counselling role to place his service in the proper perspective, as a link in the chain of assistance provided to the whole patient. Patients must have the chance to reject an aid should they wish to do so. Fluent reading may be impractical, so an aid which is adequate for reading telephone numbers may be inadequate for a novel. If reading novels is of principal interest to the patient, he should be guided to a realistic acceptance of the difficulties posed by an ocular impairment after discussion with the optometrist. Some aids which are adequate from an optical point of view do not meet the cosmetic criteria of acceptability and will be used privately at home, but not in the presence of others.

An understanding of the sensitivity of patients is essential if real assistance is to be provided. Good liaison between the patient coordinator and the ophthalmic practitioners is necessary for this to be successful.

The University Departments have a role in research and several projects have stemmed directly from their involvement in the low vision clinic. New methods for scaling visual performance have been developed (Bailey and Lovie, 1976, Cunningham et. al., 1980) and new techniques to test and quantify the magnification properties of low vision aids have been reported (Smith et. al., 1979). A new closed-circuit video magnifier has been developed for local manufacture (Cunningham and Johnston, 1980). Research work in progress involves the simulation of visual impairment in normal people for teaching and demonstration purposes (Liubinas, 1979). The stimulation this research activity provides to other staff is an important element in our provision of services. It prompts us to consider alternative solutions and to seek out the views of a colleague working in the research area.

## Patient Welfare

This third component of the low vision clinic is the least understood, but in many ways the most important. It provides the essential support for the ophthalmic services in the area where they are most likely to fail, the home environment.

After examination by the optometrist, the patient is reviewed again by the *aids instructor* who happens to be the *patient coordinator*, but wearing another hat. The decision to allocate these two roles to the one person is a deliberate one, to foster and maintain a personal delivery of care and reduce the confusion caused by too many "experts". Training in the use of low vision aids must be an on-going process in the first few weeks, which is the reason that the optometrist often loans aids for home or clinic trial before final prescriptions are decided. The patient requires encouragement and reinforcement as to the correct manner in which to use high addition spectacles or hand magnifiers, or to position supplementary lighting or fold the newspaper for easier handling. In this task the aids instructor is assisted by the *occupational therapist* whose special expertise enables the patient to manage the more awkward activities of daily living. Occupational therapy is a tertiary level discipline concerned with helping people whose usual skills have been impaired by disease or injury. Vision should be a special area of interest for occupational therapists, because their work in geriatric institutions is widespread and so many people in this age group experience visual difficulties, even those relating to the simple use of conventional bifocal or reading spectacles.

The expertise developed at this clinic is now well recognized and the clinic has become a resource for teaching students of occupational therapy the special procedures required by the visually impaired to manage the business of day-to-day living. The occupational therapist must be alert to the problem of multiple disability, and frequently must supplement her clinical advice with domiciliary support through the clinic or the social welfare network of the Association and its suburban and country branches.

The role of the occupational therapist is essential in restoring a patient's confidence in his own abilities and assisting him maintain the dignity of independent living. Her advice covers the gamut of daily activities, including those most of us would consider trivial, but which pose often insuperable difficulties for the visually impaired. The broad scope of her assistance is demonstrated in Figure 3, (p.258 ). Even for those patients whose vision cannot be improved with optical aids, the practical and empathetic advice of the occupational therapist is essential in retraining skills and improving morale.

The *mobility instructor* follows up one specialized aspect of the many activities of daily living questioned by the occupational therapist, that of orientation within the environment and personal navigation from place to place. She assesses a patient's need for primary mobility aids such as the long cane or guide dog, or secondary aids such as the sonic (binaural) spectacles or Mowat sensor. For some patients, referral for specialist residential training in mobility skills may be required. For patients with a usable level of residual vision, she provides follow-up instruction in the use of distance optical aids, training patients in the alignment and sighting of telescopes and the spotting of distant landmarks such as street signs or bus and tram numbers. Her task involves the investigation of a patient's capacity to cope with pedestrian obstacles such as kerbs, steps and pavement irregularities. She organizes methodical approaches to journey planning, the use of public transport, operation of lifts in buildings, and so on. Much of her work is done within the patient's own environment and after an initial assessment at the clinic, further assistance may be provided by one of the Association's other mobility instructors stationed at a regional centre closer to the patient's home.

The Association for the Blind operates a social welfare department especially sensitive to the social disorganization, either directly caused or exacerbated by visual disability. The clinic *social worker* is a member of the wider team belonging to the social welfare arm of the Association. Her role is to restore the patient to a satisfying and adequate relationship with his family and his community. She must be expert in the problems of social provision,



## OPHTHALMOLOGIST

- diagnoses eye disease and refers patient elsewhere for medical treatment if required.

## OPTOMETRIST

- assesses the functional visual impairment and prescribes low vision aids and vision training to improve function with certain tasks.
- provides short and long term reassessment.

## SOCIAL WORKER

- assesses a patient's social needs given his visual, physical and social disabilities.
- provides assistance in relation to employment, financial and social situation.
- acts as a skilled helper in restoring satisfactory relationships between a patient and his family and community.

## MOBILITY INSTRUCTOR

- assesses mobility skills and spatial organisation of patient.
- develops strategies and provides training in mobility and the use of distance telescopic aids.
- training in the use of public transport.

## OCCUPATIONAL THERAPIST

- independence in the activities of daily living

### Communication

Develops confidence in recognising others, writing, signatures, typing, Braille, telephone skills, use of tape recorder: large print materials are available.

### Self Care

hygiene and grooming - bath, shower, shaving, nails, hair care, make-up  
dressing - identification of clothes, shoe care  
clothes - cleaning, ironing, brushing  
sewing - repairs (threading needles, machining, buttons)

### Eating

'normal' use of knife, fork and spoon  
identifying food location  
use of condiments  
avoiding spillage  
pouring liquids

### Cooking

reading/listening recipes  
measuring ingredients  
preparing and mixing  
use of appliances  
cooking skills, organising and cleaning up

### Community Skills

- money: use of wallet or purse
- coin and note identification
- telling time: management of keys in locks
- special problem at church or shopping
- recreation group: elderly citizens (eg. scrabble, bridge, solo)
- sporting groups (eg. bowls, cycling, swimming, skiing)
- use of public telephone and public toilet

### Home Maintenance

- cleaning: washing, sweeping, vacuuming, making beds, avoiding obstacles
- recognising household items, labelling food containers, organisation of drugs
- safe use of heating and electrical appliances

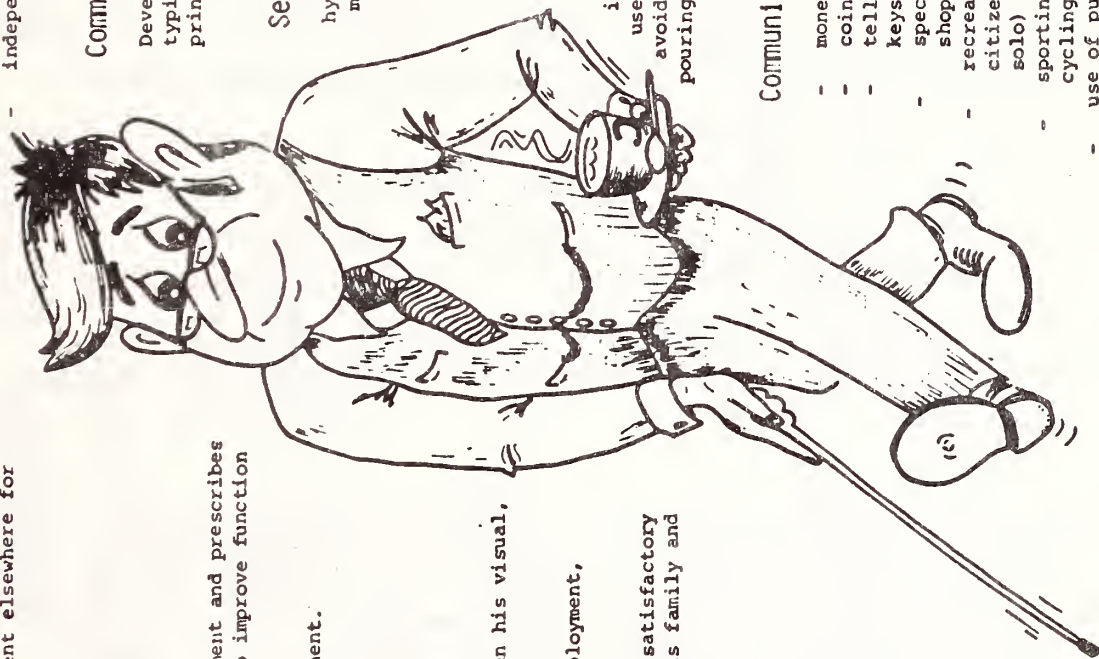


Figure 3: Summary of Aid Delivered by Some Clinic Personnel

because many patients face difficulties of "sick role" resulting from their visual or other impairment and subsequent disability, unemployment, poverty and personal alienation. An immediate responsibility might be to assist the patient to secure the appropriate social welfare benefit (age or invalid pension) or refer him to a welfare resource within his own community (municipal service, community health centre or local hospital).

Although I have left a consideration of the role of the social worker until late in this paper, in fact, the need for social counselling and guidance often arises earlier in a patient's cycle of visits to the clinic. Some 15% of patients are referred to the clinic by the social work department of the Association or other social welfare agencies, so that extensive counselling on these matters from within the clinic may not be required. The patient coordinator may elect to seek out the social worker before ophthalmic investigation is commenced, should she perceive the patient's social need to be an urgent one. The clinic organization should be (and is) flexible enough to allow an alteration to the regular arrangement of consultations as depicted in Figure 4 (p.260), to enable these problems to be met and remedied as they arise. Good liaison between an alert patient coordinator and a practical social worker is essential!

Finally, *educational and vocational counselling* is necessary. This is provided in general terms by our social worker and in specific terms by two of our sister organizations, the Visiting Teacher Service for the Visually Handicapped, Victorian State Education Department (VTS) and the School Medical Service of the State Department of Health. All levels of student endeavour - pre-school, primary, secondary and tertiary - fall in the ambit of VTS and their support is invaluable in facilitating a student's goal. Clinic staff appreciate the comprehensive referral information regarding study difficulties experienced by children at school. The visiting teachers report that their task of teaching the visually impaired is greatly assisted by the work of the clinic in providing optical and non-optical aids. The VTS provides a visual stimulation programme for pre-school children whose



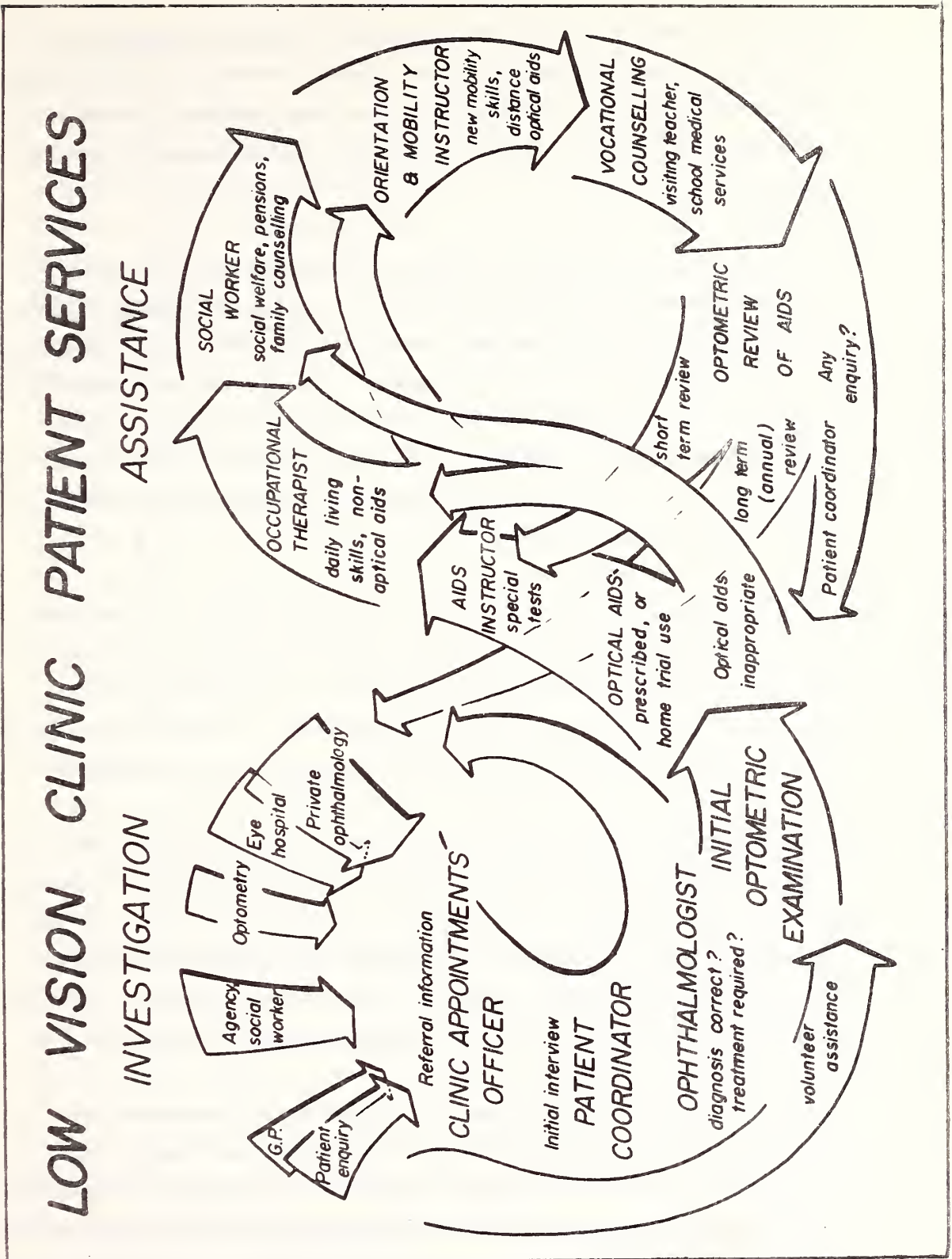


Figure 4.

The cycle of services offered by the Low Vision Clinic. Note that in the "Investigation Cycle" a patient might be referred (back) to an eye hospital or ophthalmologist if the clinic ophthalmologist finds evidence of active pathology or suggests other medical treatment. In the "Assistance Cycle" a patient who is prescribed aids may, after a trial period, have his aids reassessed and be reviewed by the optometrist and the occupational therapist and the mobility instructor before being discharged from the clinic. Patients are advised to seek regular consultation with their ophthalmologists.

visual prognosis in previous years would have been hopeless. This programme stimulates an awareness of visual function and develops behaviour based on visual input. For many students visual learning becomes possible after training and full visual potential can be realized.

At the present time the Association is considering the role of a visual stimulation programme within the clinic setting and would envisage that such a programme could be undertaken by the employment of an orthoptist or other professional skilled in the management of children. Up to the present time it has not been possible to employ an orthoptist because of politico-professional barriers, even though several orthoptists have expressed great interest in working in the clinic.

Figure 4 depicts a possible cycle of patient visits to the low vision clinic and illustrates the interactive roles of all team members. The clinic does not take over the ophthalmological management of a patient's visual impairment - indeed it takes some care to maintain the patient under the continuing and regular review of his own practitioner. It gives the option of the prescription of low vision aids to the patient's optometrist, especially when he is a practitioner in a country area. However, many optometrists prefer to see the coordinated delivery of low vision care - not just optical aids but the gamut of services referred to above - derive from the low vision clinic in a scope and breadth available only from a multidisciplinary service.

Although not an individual member of the low vision team, the agency itself, the Association for the Blind, also has a role in the delivery of the low vision service. I have already mentioned its responsibility to coordinate the services offered by the clinic and to provide the management and administrative skills so necessary for the sound and efficient operation of a welfare service in these times of increasing government financial stringency. In Figure 1 I have attempted to depict the dual role of the Association as one of low vision clinic coordination and management - the umbrella - as well as that of a continuing and critical assessor of services - the "pool" of results where the cost of the clinic services is weighed against their effectiveness.

There are two elements to this assessment procedure. The first is an ongoing review of our success in meeting the many needs of individual patients, not only with regard to ophthalmic services but all the assistance provided from the clinic. One method of reviewing success rates which has been adopted by the Center for the Partially Sighted operating out of the Santa Monica Hospital Medical Center in California, makes use of a domiciliary visit by a "personal environmental adjustment counsellor" who visits approximately six months after a patient's initial consultation at the centre (Anon, 1978). Visual impairment literature conjectures that most low vision aids prescribed are not in fact used, for reasons that include a need for a revised prescription, problems of restricted field of view or improper use of illumination or working distance. Their findings demonstrated a 70% "success" rate in aids usage, contrary to the conventional wisdom. More importantly, the domiciliary visit was used to prompt patients to follow up any difficulty with usage of aids to remedy these problems. It is not necessary to convince social workers, mobility instructors and occupational therapists in our clinic of the very great value of assessing the patient on his home territory.

The second element requires a more broad view of the Association's operation of its clinic. The 1979 Report of the Senate Standing Committee on Social Welfare states: "... health and welfare providers should conduct ongoing evaluation in order to fulfill their responsibility to be accountable for the services they provide .... evaluation improves the decision-making process, both at the programme-planning level and in the agencies and enables all services to operate more efficiently and effectively .... The consequences of not evaluating include indiscriminate policy decisions and inability to plan nationally for the development of the health and welfare system.... The essential prerequisites for evaluation - that is, the determination of needs, the setting of goals and objectives, the establishment of standards and collection of appropriate data - are at present given low priority." What the report implies is that a demonstration of evaluation and accountability is going to become even more necessary if continuing government support, in a climate of deficit budgetting, is to be made available to health and welfare agencies.



The Association does not have to fund these programmes of research and evaluation from its operating or recurrent budget. The National Health and Medical Research Council (NH & MRC) has identified six criteria to select areas where major expenditure might be made on problems of national health. These criteria are:

- high mortality and/or morbidity;
- current costs involved in relevant health care;
- loss of manpower and/or productivity;
- social consequences;
- community recognition of the problem;
- potential benefits of the research to health problem areas.

Using these yardsticks, NH & MRC states that the two areas for research which clearly stand above all others are:

- evaluation of health care procedures, and
- addictive behaviour.

and they recommend that these be the subjects of major initiatives to be taken over the next three to five years (NH & MRC, 1979).

The message is clear: the Association has a responsibility to plan and execute the research required to obtain government support in the future, by demonstrating beyond any doubt the benefits and effectiveness in community terms of the care provided by the low vision clinic. In this way the Association will consolidate the gains already made in this important area of health care and secure the place of the clinic in providing this essential and unique service to the visually impaired community in Australia.

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## ARE THERE LIMITS TO LOW VISION CARE?

Margaret Lawrence

Today we are looking at the topic "Improving the Quality of Low Vision Care". Low vision services, wherever they are provided - private practitioners, hospitals, community health centres, or agencies for the blind - are administered by people for people. Some of us are going to be limited in what we can provide by our resources, facilities, funds and our manpower.

People with low vision who live in areas far away from major low vision clinics will be restricted if they do not have easy access to services. Even in countries where services are taken to those in remote areas, there will inevitably be limitations as far as the provision of comprehensive services is concerned.

In some circumstances, it will be difficult to do very much about limitations. However, I believe that there are other factors which set limits to low vision care which are not dependent on additional money, better facilities or increased manpower.

Some of these factors we cannot change as they depend entirely upon the patient as a person. Each individual possesses personal qualities which will determine attitudes, expectations and motivation. Reaction to visual loss will be strongly influenced by personal traits that have developed through life experience.

The patient's personal relationships are usually already well established before low vision care is sought. Self esteem can be dramatically affected as a result of visual loss. The extent to which the patient can be assisted will depend not only on these aspects of his personality, but on how many of his needs he is willing to disclose. This disclosure partly depends on the relationship between the patient and the particular staff member involved. Personality and relationships therefore present some

limiting factors.

I would now like to briefly touch on five factors associated with the patient which can be limiting but about which we can do something without financial cost.

#### The Patient's Understanding of His Visual Loss

At least 85% of our patients are unsure of what has caused their visual loss and a large majority have no idea at all.

The practising ophthalmologist is the source of authority at a time of crisis, and his explanation to the patient about a deteriorating eye condition and his concern for the patient's future is of the utmost importance. Clarity, sensitivity and accuracy in telling the patient about his medical condition cannot be over-emphasized. This should have taken place before the patient is referred to a low vision clinic. The patient's understanding of what he has been told contributes significantly to future rehabilitation efforts.

The ophthalmologist, even though he may not realize, is partly responsible for the patient's social and psychological adjustment. Reluctance on the part of practising ophthalmologists, firstly in bringing the patient to an understanding of his visual impairment and, secondly, referring the patient for a low vision assessment, can limit low vision care.

#### Lack of Cooperation Between the Eye Care Professions

Vision Canada, an enquiry into the unmet needs of blind Canadians, says: "Very little precise information is available about the range of quality of low vision care services in Canada. However, there is no doubt that the available services are unevenly distributed to an

alarming degree. It is also conceded that the failure of ophthalmologists and optometrists to cooperate with each other only adds to the cost of health services and reduces the quality of low vision care" (Greenland, 1976).

It is generally recognized that no one person or professional group can provide adequate care for the low vision person, now being seen as the complex person he is, with individual needs. But it should be realized that it requires the skill of both ophthalmologists and optometrists, together with other professional staff, to provide optimum low vision care.

#### Poor Team Work

If there is a lack of cooperation within the team, the benefits to the patient will be lessened. Provision of services by a team can only be an effective way of ensuring continuing competent care for low vision patients if there is a good records and communication system.

When selecting team members, the personal qualities of the people should be a primary consideration and the added educational qualifications secondary. There is a great deal each one of us can do in making our team work towards our common goal - the patient. We must constantly work at our relationships with other team members to avoid placing limits on the care we are offering.

#### Atmosphere

First class physical facilities do not necessarily create the desired atmosphere.

A patient who is not made welcome on arrival, or is subjected to casual, off-hand treatment, could have his worst feelings about himself reinforced. Likewise, a brusque manner or hurried questions, as a result of pressure on the interviewer or examiner, may take on values out of proportion to their intent. This could interfere with the developing relationship with the patient and his willingness to accept the advice or recommendations offered at that time or at a future date.

### Attitudes of Staff

All low vision clinic staff require some understanding of basic common human needs and principles of human behaviour. Whether we are aware of it or not, we are dealing with the patient's feelings in everything we say or do.

As the majority of our patients are both aged and visually impaired, we need to be very clear in our own attitudes, not only towards visual impairment, but also towards ageing. The elderly themselves have been conditioned to accept their comparative worthlessness and insignificance, which is often further enhanced and their self-esteem further eroded if the older person is also visually impaired. If staff in a low vision clinic subscribe to the widely held image of the old as passive, poor, pitiful, second-class citizens, there will be limits to the care of the older person with a visual loss.

Finally, to illustrate that age is not necessarily a limiting factor to someone with low vision, I would like to tell you about Miss Punshon, a rather special person.

She is currently aged somewhere between ninety-four and ninety-eight years and first attended the Low Vision Clinic at Kooyong in March last year. Miss Punshon lives alone, manages to look after herself

without assistance, and is still teaching students both English and Japanese. She was having difficulty in completing the writing up of the curriculum for the first correspondence course in Japanese. After attending the clinic she was loaned a closed-circuit television and was able to finish her task. Since then she has had a cataract extraction and her vision is markedly improved. Miss Punshon has just returned from a month's holiday in Japan which she enjoyed. The holiday was at the invitation of the Japanese Government. This was in recognition of her involvement with Japanese prisoners-of-war at Rushworth, Victoria, and for her contribution in setting up the first correspondence course in Japanese.

Is age on your list of factors which limit low vision care?

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## ARE THERE LIMITS TO LOW VISION CARE?

August Colenbrander

There are many factors that can limit low vision care appropriately or inappropriately, but here we can only touch on a few.

One point I would like to mention is that of attention to patient needs which Dorothy Judd brought out so appropriately yesterday. She came to a professional who thought that he knew what her problem was and gave his solution to what wasn't her problem. He also didn't ask her what her real problem was and failed to find a solution. That is a trap that too many of us fall into too easily.

Because we are professionals who have studied for a long time, we think we know what your problems are. If your problem is a cataract we put you to sleep and take that cataract out, and when you wake up it is done. When your problem is glaucoma, we can measure your intraocular pressure, prescribe drops and manage that glaucoma without having to bother very much about the person who is attached to that eyeball. If we want to prescribe glasses, we have means of objective refraction and can do that without involving you, the patient.

Low vision care rehabilitation in general asks for an entirely different and much less paternalistic attitude. It takes a great many of us a great effort to make that change and really listen to what people need. In thinking about what people need, we list many things. One of the things that is high on our list is independence in our society, but here again we can push that independence too far. What is really needed in this society is not so much independence, as interdependence. The World Health Organization Classification of Handicaps does not list social independence but social integration.

When we look at the fact that many of our patients are elderly, one of the major problems of the elderly is isolation. It may be a very

significant blessing in disguise for an elderly couple to sit together and for her to read the newspaper to him. If we gave him a talking book and made him independent, he may sit alone. If we provide the elderly grandmother with a magnifier so that she can read her own mail and her granddaughter, who came by every other day to read her mail for her doesn't come by anymore, we have increased her independence, but whether we have increased the quality of her life remains to be seen.

All of us know stories of people who are recommended aids they don't use until their spouse dies and they come back and say: "Now I am in a situation where I really need those aids". We have to take all of these personal factors into consideration. We also have to consider the multiple handicaps that often accompany older age, where a number of small handicaps may accumulate.

The question of registration of the blind was also raised yesterday. I believe that forced reporting is very invasive of privacy and should only be imposed where a condition would pose a threat to society. A contagious disease, for example, should be reported, but I see no need to report a certain level of visual acuity. We have also heard how unreliable visual acuity measurement can be, and how little visual acuity measurement is a measure of real patient needs. Finally, a register is ineffective because we cannot get good reporting. In the State of Massachusetts it was reported that registration of the legally blind jumped by 7% each year over several consecutive years. The reason was not a drop in eye care, but rather that if you were legally blind and elderly, you were eligible for social security benefits, and the rate of social security recipients was increasing. There are much better statistical tools in sampling techniques that can provide us with much more reliable data.

I think that the most important determination of how we reach our people is to promote an awareness of what we can offer among professionals, ophthalmologists, optometrists, social workers, counsellors, patients, families, relatives and the teachers of our patients and clients. If that awareness grows, people will come to us by the free forces of the market place and not by the forced registration.

In our low vision service, we make it a point that we always tell the patient to come with a spouse, a parent, a son or a daughter or just with a friend, because we have found that the information we give to those significant others in a person's life is of as much importance as the information that we give to the patient himself. It is as important that the spouse, for example, understands what is happening, as that patient himself or herself understands.

A third point I want to mention is research. We have heard about high technology research. However, I think that if we want to reach the large majority of our low vision people and if we want to meet the needs of the developing countries, low technology research, the simple hand magnifiers that you can buy for a dollar, for example, are at least as, and perhaps more important. Rather than developing more technical means which do not reach those in need, let us concentrate on developing technical means that are readily available to people who can use them.

## ARE THERE LIMITS TO LOW VISION CARE?

Allan N. Freid

In my previous presentations at this conference, I have several times alluded to adequate funding of low vision care being a major obstacle. It is my opinion that funding is the primary factor in restricting sweeping success throughout the field. The patients' and public's awareness of the availability and goals of low vision care has a decisive effect in determining the number of patients who seek, receive and accept care.

Education to increase the general public's knowledge and understanding of low vision could be expected to increase the number of patients who might be rehabilitated in at least two ways. Firstly, if there were greater public acceptance of low vision, more patients would be less likely to conceal their impairment and thus the numbers of patients seeking services would increase. Secondly, by public education we might expect an increase in funds allocated for low vision care. The amount of monies available determines the number and types of professionally trained personnel who may be involved, the range of therapy offered and not least important, the amount of research that may be conducted to expand our limits of success.

Prior to the last ten years, there was very limited organized research in low vision in the United States. What research there was usually involved statistical studies of patient care, and two or three of the pioneers in the field working on the design of improved optical systems. Only in recent years have there been investigations involving better testing techniques and equipment, formalized training procedures, attention to visual field problems and expanded use of electronic devices.

It is disappointing when one realizes that with very few exceptions, very little low vision research is carried out by the professional educational institutions, both optometric and medical. However, I



suppose that this is understandable since the types of research I have mentioned do not ordinarily seem to fit the qualifications for most grant applications.

Some of the research carried out by individuals in recent years has resulted in many advances in the field. Among these are: better charts for measuring visual acuities, less aberrated microscopic lenses, spectacle telescopes of higher magnifications and larger fields of view, field awareness devices for those with restricted visual fields, and closed-circuit television systems which offer not only enormous amounts of magnification, but also afford better contrast, better illumination and increased comfort. There has also been research resulting in aids for driving automobiles, better techniques in training eccentric viewing and many others.

So far I have discussed factors which limit the general field of low vision care which in turn does limit individual patient care. But now I want to address some of the factors that may directly restrict successful individual rehabilitation.

Perhaps the most fundamental factor which can limit low vision rehabilitation is the attitudes of the professionals and the patients. The earliest impact may be that effected by the eye practitioner who first tells the patient about the possibility of low vision care. If this practitioner is negative about the possibilities of success, the patient may also assume this attitude. This makes the mission of the low vision professionals at best more difficult and at worst sets the stage for failure.

R.E. Simmonds in 1966 published a report that indicated that two-thirds of the ophthalmologists in the area surrounding Washington, D.C. whom he interviewed had poor to negative attitudes toward rehabilitation. This finding was especially discouraging since repeated studies, even when limited to the legally blind, had shown 70% and higher of the patients seen, using the aids prescribed. Likewise, to the average optometrist, the 30% failure rate seems enormous in contrast to the tiny failure rate he experiences in routine refractive care. Thus many optometrists also develop negative attitudes toward low vision care.

All those who come in contact with the low vision patient should have a positive attitude toward the possibilities of success. This is not to imply that individual patients should be misled or have their hopes improperly elevated and later shattered when limitations become apparent. We all seem to perform better when we expect to reach our goal and especially when we are encouraged by those attending us. The first factor relates to the "self-fulfilling prophecy", while the second relates to the so called "home court advantage" in the sports arena, where more fans cheering for the home team affords a psychological advantage to that team.

The maintenance of proper attitudes is not limited only to the professionals but applies to everyone coming into contact with the patient, including public agency personnel, appointment secretaries, receptionists, records personnel and even the custodians where patient contact exists. Some clinics have enlisted successful former patients to help in this endeavour. However, one must be very careful that these former patients do not interact with the new patients as if they all had the same problems and goals. Further, the former patients must be restricted from imposing any of their own limitations that may exist on the new patients.

The personalities of those working with the low vision patient are very important and may be basic to the development of proper attitudes and rapport. The professionals, as well as others involved, should be mature, cheerful, but serious individuals who are empathetic without showing pity or exaggerated sorrow. They should be individuals who are not embarrassed by disabilities. They should possess ingenuity and be willing to devote the necessary time to maintaining and increasing their knowledge and skills.

The limits of success can also be extended by designing evaluations in such a way as to increase the odds in favour of maximum performance. Testing, as well as all other procedures, should be designed to restrict failure to an absolute minimum. Certainly, limits of performance must be determined, but the direction and method of approaching the limits is very important. Visual acuities should not be measured until lenses are in place that would be expected to afford the best possibility of maximal achievement. At the earliest this

would be after retinoscopy has been accomplished. Letters and charts should be read from very large optotypes toward the smaller, beginning with a size and distance where there is no doubt that several lines of type will be read.

Limitations on individual oriented rehabilitation programmes will depend upon the types of professionals available and the level of their interaction. Group conferences of those attending a particular patient are most helpful in augmenting care.

From the purely visual enhancement standpoint, we do have limitations in what we can do for certain impairments within our present range of optical aids. Progress in this area is painstakingly slow, but is taking place.

In recent years there have been many new devices made available. Among these are: telescopes with higher magnifications and larger field limits, improved bioptic telescopes for driving, aspheric microscopics, Fresnel prisms for visual field restrictions, image brightness intensifiers for retinitis pigmentosa, portable illumination systems for retinitis pigmentosa, special tints for extreme illumination problems, closed-circuit television systems for extreme magnifications, for contrast and brightness enhancement and for situations where manipulations are required. Both soft contact lenses and gas permeable hard contact lenses have become available for corneal problems and/or extreme prescription requirements. Very recently, designers have made available specially designed minus lens systems and specially designed minifying telescopes for concentric field restriction problems. I fully expect the frontiers to continue to move forward with time, but I certainly would prefer faster progression.

Placing psychological elements aside, the major obstruction to optical aids providing the desired effects seems to be the status of the patient's remaining visual field and the field restrictions inherent in the devices themselves. Thus, the prescribing of optical aids is limited by the individual pathology in relation to its effect on the patient's visual field. Diabetic retinopathies are especially difficult, not only because of the visual instability due to



variations in the diabetes, but also because many times there are multiple scotomas situated such that there is not a large enough single intact field area which will allow for performance of certain tasks.

The low vision practitioner must exhibit great ingenuity in designing solutions to some of the problems presented. This sometimes requires great imagination to adapt currently available aids to the needed uses. Perhaps our most critically important need at present is further solutions to problems of field restrictions. Although, as mentioned previously, new devices have recently been made available for visual field problems, we are still greatly hampered by this impairment.

Another restraint to the use of optical aids is the patient's acceptance of the aids. This will relate to the patient's self-image, the aid's cosmetic appearance, the patient's fear of what others may think, any difficulties encountered in learning to use the device and others. The effect of these elements on acceptance will be determined by the strength of the patient's motivation. Hopefully, the solutions to these problems along with the reinforcement of the motivation would be successfully managed by the rehabilitation counselling team.

Limitations in learning to use an aid efficiently or learning to use the remaining vision in an optimal manner may be greatly reduced by the ingenuity and skill employed by the training team. Training success is also very dependent upon the indulgence and persistence exhibited by both the trainer and the patient. Of course, there are also limits dependent upon the patient's abilities relating to age and mental and physical faculties. As previously stated, some of the factors causing these limits can be altered by attitudes and approaches used by the trainer. The unfortunate fact is that there has been very little research into methods of training the visual aspects of low vision, and where special techniques have been developed, they have not been disseminated very widely throughout the field.

Lastly, we should not forget the importance of follow-up in maintaining the rehabilitation effects. Patients should be contacted no longer



than one month after being discharged, if only by telephone. Questions should be asked to ascertain if the patient is still using his vision and/or aids as instructed. Any problems should be addressed directly. This contact should be repeated in six months. Following this, patients should be seen annually at least for a superficial evaluation to determine if there have been any changes in vision, if any aids prescribed are still being used properly and if any new requirements have arisen. All of these time intervals are subject to variation in any individual case when needed. Special attention should be afforded those cases where progression of pathology may occur.

In summary, I want to state that given properly motivated patients with realistic goals, given trained professionals with proper positive attitudes and ingenuity, given unrestricted access to all types of low vision aids, given appropriate time allotments as needed for each type of patient and given adequate funding, one would expect the limitations in low vision care to be minimal for near to 90% of the visually impaired population.

#### Reference

Simmons, R.E., "Current Ophthalmological Attitudes Toward Rehabilitation of Patients With Loss of Vision", New Outlook for the Blind, Vol. 60, No. 10, 1966.

## NEW ZEALAND LOW VISION SERVICES COMMITTEE

Peter J. Turner

Several low vision clinics have been operating within New Zealand in a variety of settings for about five years. Based generally in hospital eye departments, they have provided an extension of acute medical services, but have offered little in the way of social and vocational rehabilitation. These aspects have tended to be consigned as a subsidiary function of the Royal New Zealand Foundation for the Blind (RNZFB).

If the low vision impaired set is considered to be in approximately the same ratio to the general population as determined by Doherty (1976) and Goldish (1972), it is likely that 25,000-30,000 New Zealand citizens fall into this category. Because the median age of the population is rising, the group is likely to be increasing in number.

Trained rehabilitation personnel such as occupational therapists, social workers and psychologists are not generally involved in the team within existing New Zealand clinics or if they are called in, with few exceptions, have no specific training in the field of low vision.

Rehabilitation is not the exclusive prerogative of physical medicine, yet the organization of services and existing legislation supports this attitude.

For the client group there is a sense of alienation in being placed in an acute medical treatment setting. On paper, at least, the establishment exists to broaden the expertise of the rehabilitation team, but present organization and a chronic lack of funds denies the client access to these additional services.

The method of funding and provision of aids varies depending upon the organization and the cause of the disability. One clinic hires out

the appliances, in other organizations the client pays the full cost. Some are provided by the RNZFB where support is required, particularly to attain education or employment. If the visual impairment results from an accident, the Accident Compensation Commission may pay not only for the aids, but also for many other rehabilitative services including, if necessary, modifying a house.

Training in the use of aids is generally limited by the time available to practitioners and rarely does the opportunity arise to survey the home or workplace to establish need.

The disabled population is sparsely settled and whole regions of the country are geographically isolated from the nearest low vision services. Whether or not any service is available depends upon the interests of the local practitioners.

In April 1978, the opportunity arose for me to present, with support of the Director of the RNZFB, a short paper expressing many of these concerns to the National Civilian Rehabilitation Committee (NCRC).

Represented by the Directors General or their appointees of Labour, Education, Health and Social Welfare Departments and the Accident Compensation Commission, this interdepartmental coordinating body resolved that a subcommittee be formed to investigate the total concept.

In due course this subcommittee was established and was known by the grand title Subcommittee of the NCRC to Study the Adequacy of Services Available to Persons Suffering from a Visual Handicap or Blindness. To it was appointed the Deputy Director of Special Education, the Directors of Rehabilitation for the Social Welfare and Health Departments, an ophthalmologist and myself, an optometrist. (It should be noted that the RNZFB is administered under a statute controlled by the Ministry of Education).

The following terms of reference were approved:

- review existing facilities;

- . examine legislative responsibilities of all government departments and agencies concerned with rehabilitation; determine what organizational development, if any, is proposed by the above to extend their activities within the field of low vision;
- . review overseas models for low vision "systems" and determine their relevance to New Zealand conditions;
- . consider representations from interested bodies with a view to establishing what are seen as inadequacies in present services, and what innovations may be appropriate to New Zealand's sparsely settled and relatively small population;
- . propose the priorities and machinery for the implementation of services;
- . establish a method by which low vision population statistics may be gathered;
- . establish a review procedure to modify services in the light of experience, population trends, etc;
- . recommend policy with respect to welfare funded low vision aids and appliances;
- . investigate and consider the requirements of the visually impaired within the following age categories:

Childhood	Birth - 17
Young Adults	18 - 39
Middle Age	40 - 59
Elderly	60+ years;



- investigate and make recommendations on how existing services might be coordinated;
- have the ability to coopt and seek assistance from other interested groups or individuals.

The population group under consideration was defined in conformance with the World Health Organization (WHO) Study Group on the Prevention of Blindness, Geneva, 1972. (See Table 1, p. 296).

The Committee has adopted a slightly modified definition including the limiting criteria established in the WHO study: persons suffering from a visual handicap ranging from a corrected visual acuity of 6/24 to total loss of vision, or where the best corrected near vision is N12 or worse, or where there is a significant loss of visual field, or where there is a serious loss of visual function in the domestic or occupational environment.

The catch-all clause relating to function should be noted, for the Committee felt that it was important not to be too strict about definitions in case a particular disability group was inadvertently omitted from our deliberations.

Submissions were invited from RNZFB, New Zealand Association of the Blind and Partially Blind (NZABPB), Ophthalmological Society of New Zealand, New Zealand Optometrical Association, Association of Australian and New Zealand Teachers of the Visually Handicapped, rehabilitation workers including occupational therapists, Hospital Board Association and manufacturers of aids and appliances.

These parties were asked to consider specifically:

- inadequancies of existing facilities and services;
- what improvements are seen as necessary to improve these facilities and services;
- what order of priority is seen as appropriate to implement such improvements;

- whether there is a need for greater coordination of existing services;
- how to achieve coordination;
- methods for reviewing existing and future services to meet ever changing circumstances;
- the need for low vision population statistics;
- how statistics could best be gathered;
- overseas models seen as being relevant to New Zealand conditions;
- general comments.

Existing low vision clinics were also invited to comment under the following headings:

- the present organizational structure of the low vision clinic;
- services offered by the clinic to include details of how remote areas are serviced;
- personnel involved in providing these services;
- details of statistics maintained by the clinic (the numbers undergoing treatment and the success ratio, etc);
- aids and appliances used both in the clinic and available to the clinic;
- funding of the supply of aids and appliances;
- method of referral of patients to clinics and follow up procedures adopted;

- the major needs and requirements to both improve and extend future services and development;
- criteria applied or suggested as the basis for establishing the need to develop low vision clinics in an area;
- any other comments which may be helpful to the committee in its deliberations.

From the information submitted, it was clear that there was a very considerable divergence of opinion, and further direct discussion with the various groups will be necessary to resolve these differences. To facilitate the progress of the Subcommittee in this rather daunting task, it was decided towards the end of last year that an alternative umbrella was desirable. The Subcommittee became a Working Party of the Advisory Council for the Community Welfare of Disabled People. This Council operates under the terms of the Disabled Persons Community Welfare Act. In this form the organization has direct access to the Minister, an enlarged secretariat and funds for internal travel if required, etc.

To enable the submissions to be more logically considered they have been subdivided into categories, and each member of the Working Party has assumed responsibility for a group of categories within his area of expertise.

Because it is too early for the considerations of the Working Party to be conclusive, it is not intended in this paper to present a "blueprint for the future". However, one or two comments will indicate the difficulties faced in the course of the deliberations. They will be discussed under the following headings: statistics, epidemiology, social security benefits, screening of children with low vision, the appropriate organization for providing low vision clinics, provision of low vision aids, dissemination of information, training of professionals in the use of aids, vocational training in the use of aids, education of low vision patients, overseas developments, integration of professions, legislation and other general information.

## Statistics

The gathering of statistics to define the magnitude and scope of the problem would appear to be imperative, but some means for reporting the population group has to be found. The RNZFB suggested registration for all those falling within the definition of low vision, suggesting that this would allow provision of services which at present cannot be given to those people who are ineligible for registration as members of the RNZFB. A separate partially sighted register would also remove the aversion that many people have of being labelled "blind" when they are not. It would also be the most effective way of securing information and statistics on the extent and size of the problem.

However, in the absence of any evidence to justify the contrary, the NZABPB would stoutly oppose any compulsory registration of low vision as a "notifiable disease".

To illustrate the lack of appreciation of the difficulties experienced by the low vision population by people in positions of responsibility, the medical superintendent of a sizeable regional hospital stated in his submission: "With regard to inadequacies of existing facilities and services I am not sure that these really exist". Further he stated that: "I am not personally aware of partially sighted people who are severely handicapped in either an occupational or domestic sense who are not already under the umbrella or the RNZFB".

At this stage we must reluctantly conclude that it is difficult to justify the expense and the problems that would arise from introducing and maintaining a national register of persons suffering from a low vision handicap, or of carrying out special surveys. We will, in the interim, have to apply the statistics produced in developed countries overseas, supplemented by figures available from our own low vision clinics.



## Epidemiology

The Working Party's ophthalmologist, Dr. David Sturman, wrote his thesis on the epidemiology of blindness and he will be upgrading his previous work to present to the Working Party.

## Social Security Benefits

The invalid benefit is \$2954 per year for an unmarried person, which rises to \$4924 on marriage for a man, but is lost completely by a woman upon marriage. This is one anomaly upon which we may wish to comment. Up to \$1300 can be earned before the benefit is reduced in proportion to the additional earnings. In total these benefits would provide at best a meagre living. However, at present in New Zealand's straightened economic circumstances and bloated welfare budget, it is unlikely that we will be able to justify any improvement because of the precedents established for all other forms of benefits.

## Screening of Children with a Low Vision Handicap

There is considerable room for improvement in the health screening of children in all age groups, but in particular, defects in pre-school children could be overlooked until they reached school age. Hearing and vision testers travel through all schools in New Zealand but because of absences on the testing day, poor follow up, or inadequate testing procedures, many children with vision loss are likely to evade detection for a considerable period. A study of the screening procedure for hearing loss showed that of the eighteen per hundred children with a hearing loss, six were detected, twelve were not. In the Wellington region there is 100% turnover of the hearing/vision testers every eighteen months. Training is

perfunctory and the screening procedure erratic. This whole question is under review at present by the Health Department and its revised procedures could be adopted in the not too distant future.

The Education Department has so far been reluctant to financially support pre-school services. The RNZFB has taken the initiative by appointing a pre-school services officer responsible for coordinating activities of welfare offices in branches throughout the country, and to also interact with individual families on request.

A pre-school developmental centre has also been established at Homai College for the Blind, Manurewa, where residential accommodation is available. The centre provides support for parents and children on a sessional basis from anywhere in the country.

#### Dissemination of Information

Dissemination of information is topical, for at present there is considerable interest in setting up a central data base embracing all areas of disability, which could possibly interlace into other systems elsewhere about the world such as the IRIS of the American Foundation for the Blind, or the International Register of Research on Blindness and Visual Impairment compiled by Dr. J.M. Gill at the Warwick Research Unit for the Blind.

It is probable that this information would be electronic data based, as it is predictable that within ten years, much of this type of information will be distributed in this form rather than in hard copy.

#### Training of Professionals in the Use of Low Vision Aids

There is no formal training course in rehabilitation techniques of the visually impaired in any tertiary institution.

There are seven orientation and mobility instructors for the whole country. Six are based in Auckland and one is based in Christchurch. Domiciliary services can be provided to any community. With the increasing use of sophisticated electronic aids, and the long study periods necessary for each student to reach a satisfactory level of competence, instructors are left little time to devote to the more basic needs of the overwhelming majority. Within low vision clinics, some use is made of occupational therapists, but these persons must be instructed in the appropriate techniques by the local practitioners, as there is no formal training on low vision rehabilitation technique within their three year course. They are extremely well trained in the methodology of rehabilitation and appear to be the logical paramedicals to assign the role of low vision therapist; probably however, with some form of post graduate training course.

#### Vocational Training in the Use of Low Vision Aids

Problems in vocational training are similar to all other areas of disability - lack of funds, specialized personnel and equipment.

The following subjects should be considered within a training programme:

- instruction in participation in the daily activities of the community;
- training for living in the home;
- development of workshops *not* specially for the blind, but including the blind and other handicapped;
- on-the-job training in whatever industries and employment opportunities exist;

- specific training, special courses and facilities such as programming, touch typing, etc;
- integrated training with the sighted.

Unfortunately, training at present is generally confined to reading and perhaps writing.

#### Education of Persons With Low Vision

This area is well catered for in general terms, there being a residential school at Homai College in Manurewa, Auckland. It is noted that the number of multiply impaired at Homai is rising steadily as a percentage of the whole; children who are only visually impaired tend to be directed into the mainstream education system and are assisted by resource centres in several cities.

#### Overseas Developments/Models of Low Vision Clinics

Low vision clinics such as Kooyong are ideally adapted to the environment of large metropolitan areas such as Melbourne. Certainly the services provided by this model are enviable, but the setting in a small country like New Zealand, with its widely dispersed population, is necessarily more modest and probably based upon the local hospital.

#### Integration of Professions

We are fortunate in New Zealand generally to have an excellent working relationship between the eye care professions. Optometrists are employed on a sessional basis in several hospitals so that the



basis exists for creating the specialist teams for servicing the low vision population.

It is apparent, however, where there are good public relations between these clinics and the practitioners of the area, that interprofessional rivalry has gradually been overcome with the resultant steady increase in the number of referrals. Much will need to be done to heighten the awareness of other groups such as district nurses and general medical practitioners as to the benefits of specialist low vision care and other services available for the visually impaired

### Legislation

Under this heading we will examine existing statutes as they apply to handicaps to determine if low vision in particular is disadvantaged. Aspects such as welfare provisions and accident compensation have previously been mentioned, but it may, for example, be necessary to examine the RNZFB Act to determine if the jurisdiction should be extended into the area of services for the low vision population.

### Appropriate Organization for Low Vision Clinics

Figure 1 (p. 291) displays the present organization as it exists in at least two hospitals in New Zealand and is seen as a representative model for future development.

The presence of the occupational therapist in the clinic, as previously mentioned, is an ideal rather than a present reality, apart from one or two exceptions. If it is finally resolved that occupational therapists are the appropriate profession to support in this role as is seen likely at this stage, the Working Party may recommend a curriculum development ad hoc committee, and establish a post graduate course, probably to be held at the Occupational Therapy School.

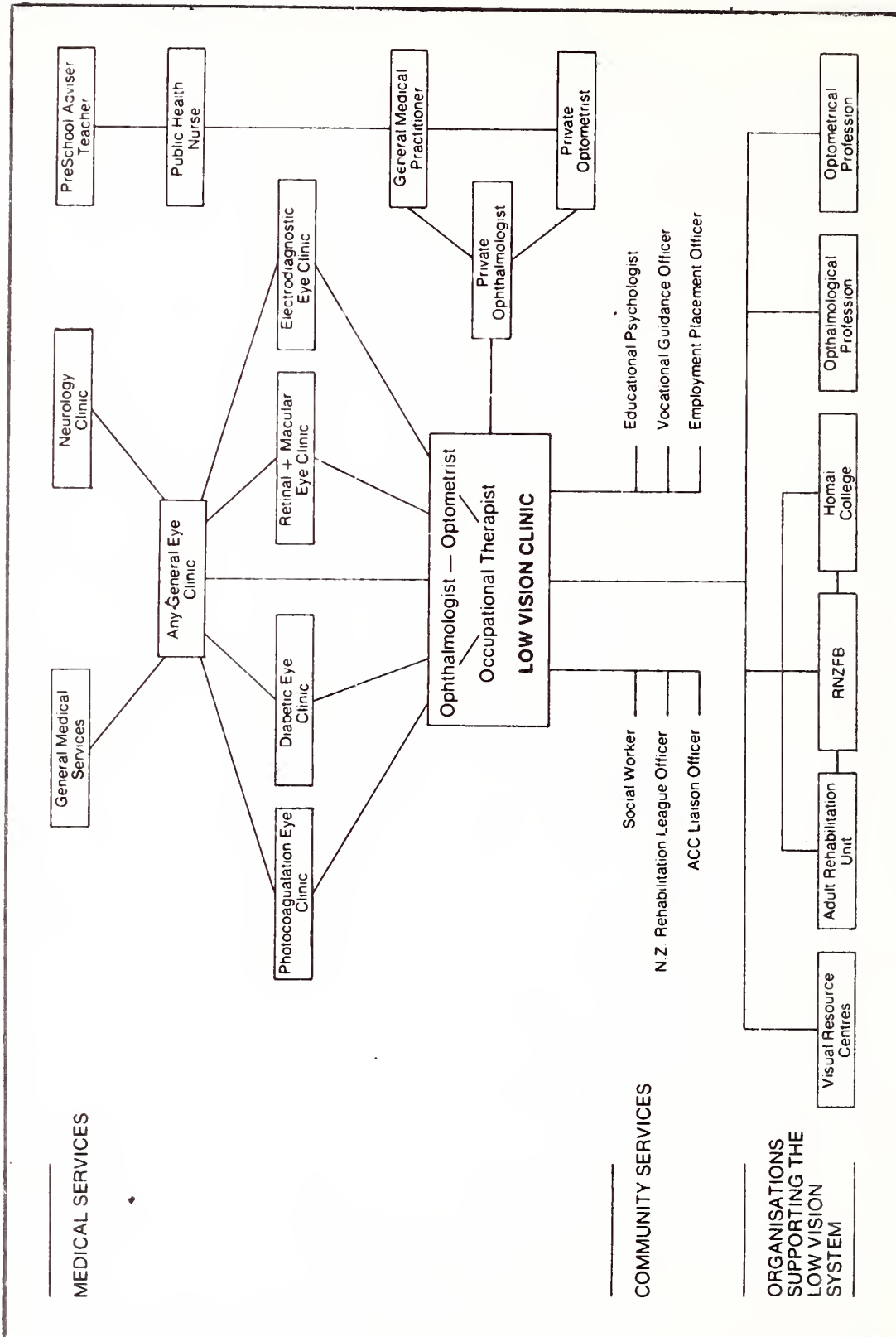


Figure 1: Low Vision Clinic Organization

at the Central Institute of Technology. One of the difficulties in establishing this, apart from finance, is the load that it places on local ophthalmologists and optometrists to provide tutoring in their specialist fields.

The Working Party will examine the interprofessional relationships as they exist between each of the individuals and services to establish clear lines of referral and communication.

All state funded institutions and departments are funded at present under what is known as the "sinking lid" policy, an anti-inflationary measure which is severely curtailing services rather than expanding them. It is inconceivable that low vision clinics will, in the illustrated form, be immediately created in all the areas they are required. Only by cutting down on another service and diverting the resources to low vision could this happen.

#### Aids and Appliances

The concept of low vision aids and appliances in terms of optical, mechanical, electronic assistive devices dispensed within a clinic is restrictive. Two examples may illustrate the point.

One elderly lady confessed that she could only safely use the electric range from 4.00 - 5.00 p.m. when the sun was shining through the kitchen window onto the scales, which were situated at the rear of the stove beyond her field of view. If it rained, or at other times of the day, she ate cold food. The installation of a floodlight mounted on the roof and directed toward the stove now adequately illuminates the scales and enables her to see how the food is cooking inside the oven. A castor based, standard mounted anglepoise lamp can be wheeled up to the bench for measuring ingredients, or over to the table for eating, etc. This assistance has been so successful that she now entertains people in her home again.

Another severe arthritic with senile macular degeneration has fused the power circuits on more than one occasion,hauling on the flex because she could not grip the plug top to remove it. Finally she had nearly volitalized prising a plug top out of the socket with a kitchen knife.

Fortuitously at the time she was having built an ownership flat, and it was opportune to specify to the electrician that the power sockets be situated one metre from the floor and that all plug tops on appliances be replaced with a type with an outward flaring plastic grip. One year later when re-examined,she commented that she was so assisted by that apparently simple modification that she had almost embarked on a campaign among her friends and acquaintances to encourage them to similarly modify their electrical circuits.

The point to be made therefore is that the influence of matters such as building codes, illumination standards and consumer appliance design can be perhaps of more, or at least of equal importance, in activities of daily living as an optically magnifying aid. The Standards Institute, Design Council and Consumers Institute must influence manufacturers, architects and others to incorporate design features which are ergonomically sound for the visually impaired, for what is good for them will at the same time significantly enhance the utility and function for the unimpaired user. (See Figure 2, p. 294 ).

With scarce national resources in terms of funds and manpower, coupled with the importance to establish priorities of need and to avoid duplication of effort, some method must be found to establish national priorities. This again can be assisted by the employment of statistical data which at present is non-existent.

The question of sales tax and duty remains a problem area, for New Zealand has not yet ratified the 1976 extension of Annexe E to the Florence Agreement which provides for duty free entry of specialist equipment for visually impaired persons.

The Hospital Tariff for aids and appliances is under review at present for there are many anomalies in provision of assistance to all



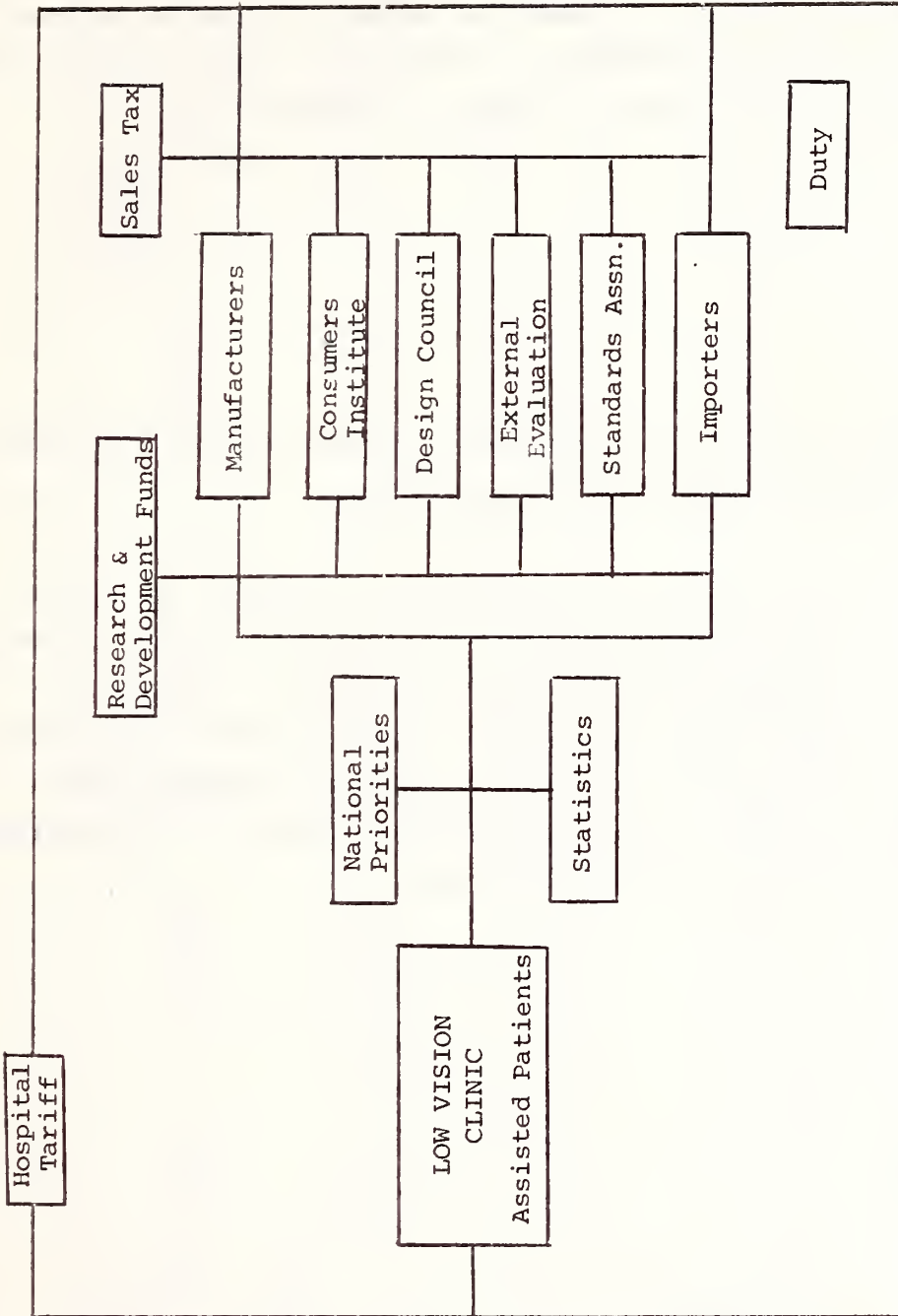


Figure 2. Aids and Appliances

areas of disability. It is unlikely that any radical changes to the tariff will occur in the present economic climate. However, even if aids and appliances were not provided free of charge, the hospital might still operate as a "bank", as a central purchasing authority thereby negotiating lower prices for volume, be able to negotiate with other government departments on matters of import licence, duty, etc. and finally to provide a source of statistics.

#### Summary

The Working Party is not so naive as to assume that it will effect radical changes of policy in the short term.

Rather it considers its role to examine the existing low vision system within New Zealand and sort out priorities for the review of services. Immediate problems might be resolved at no cost by a change of administrative procedures, improved communications or a change in legislation. Some changes of a costly nature may be deferred for a later time, but without a "blueprint for the future", the direction we are taking is aimless.

(NEAR) NORMAL			LOW VISION			BLINDNESS		
NORMAL		NEAR	NORMAL	MODERATE	SEVERE	MODERATE	SEVERE	TOTAL

VISUAL ACUITY IMPAIRMENT

NONE		SLIGHT		MODERATE		SEVERE		PROFOUND	NEAR-TOTAL	TOTAL
1.6	1.0	0.6	0.4	.25	.16	.10	.06	.04	.025	Zero NLP NLP
1.25	0.8	0.5	0.3	.20	.12	.08	.05	.03	.02	
20/12	20/25	20/30	20/160	20/80	20/160	20/80	20/160	20.500	20/1000	
6/4 to better than 6/9		6/24 to better than 6/24		6/24 to better than 6/60		6/24 to better than 6/60		3/60 to better than 1/60	1/6 to 1P	

VISUAL FIELD IMPAIRMENT

NONE		SLIGHT		MODERATE		SEVERE		PROFOUND	NEAR-TOTAL	TOTAL
180°	160°	120°	100°	60°	40°	20°	15°	10°	5°	Nil
	140°		30°		30°					

Table 1.

THE AGENCIES' ROLE IN PUBLIC AND  
PROFESSIONAL EDUCATION ABOUT LOW VISION

Graham Laurence

Figure 1 (p.298) indicates a typical disability model which, although not prepared specifically for visually impaired clients, does have positive relevance to visual impairment and clearly demonstrates the interdependence of physical and attitudinal factors in disabilities generally, including visual disability.

It demonstrates the personal or individual consequences, the immediate family consequences and the society or community consequences.

In accepting these principles as shown, the Royal Blind Society (RBS) has accepted that our rehabilitation process must have full cognizance of the psychological and attitudinal aspects, in addition to the physical factors and aspects of the clients presenting for low vision services and other rehabilitation services provided by the RBS.

We must be aware, and take positive steps, to ensure that not only the direct family, but the clients, community or society are aware and conditioned to accommodate and accept the problems associated with visual impairment.

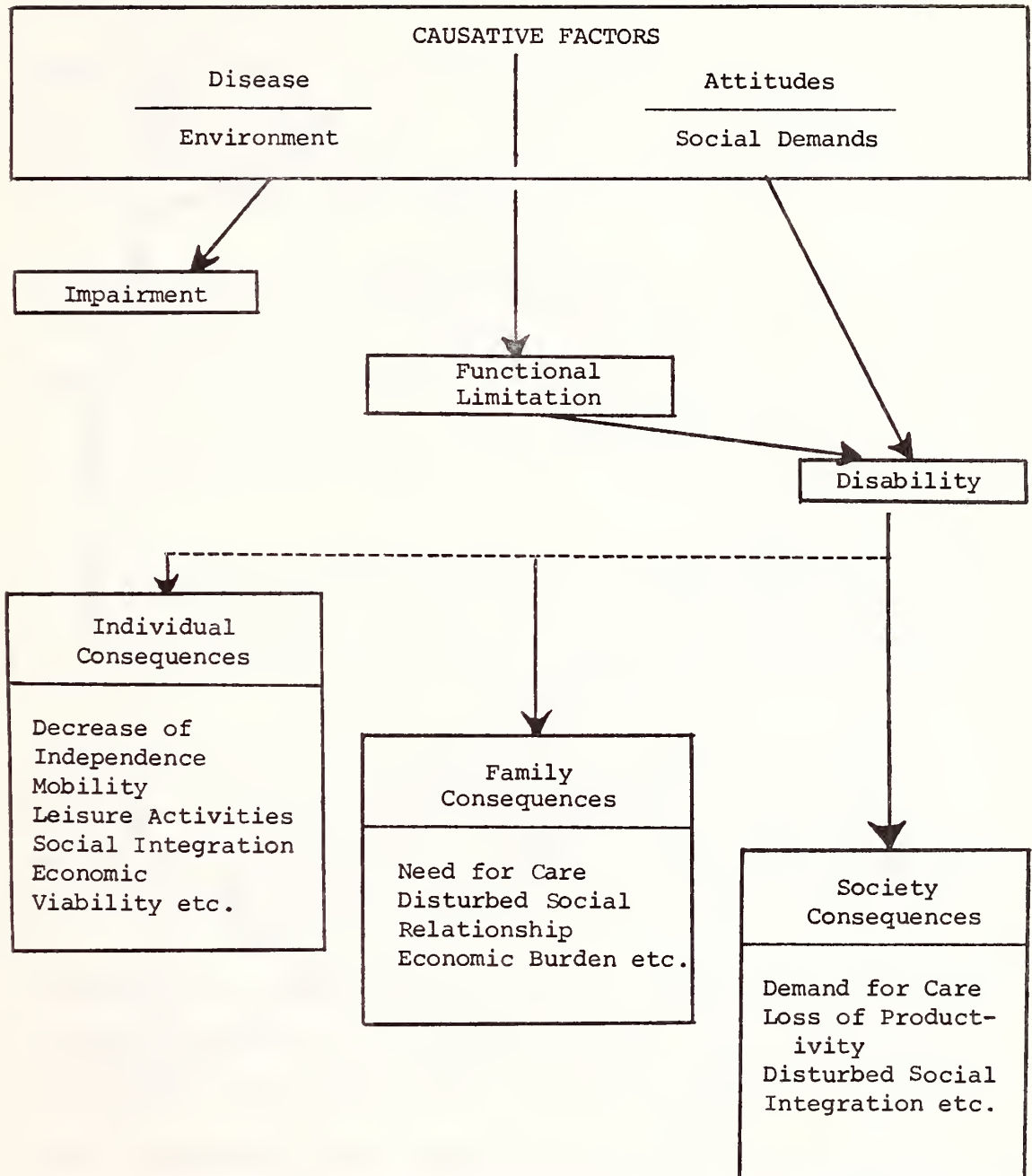
The RBS is progressively regarding low vision clients in this context - in much the same way as clients seeking other rehabilitation services from the Society.

We believe that if they are to achieve acceptance by the various sections and elements within their community, the rehabilitation process for the Low Vision Clinic client should have a four-pronged thrust (Figure 2, p.299).



THE AGENCIES ROLE IN PUBLIC & PROFESSIONAL  
EDUCATION ABOUT LOW VISION

1. Disability Model:



The model demonstrates the interdependence of physical and attitudinal factors in the creation of disability.

Figure 1.

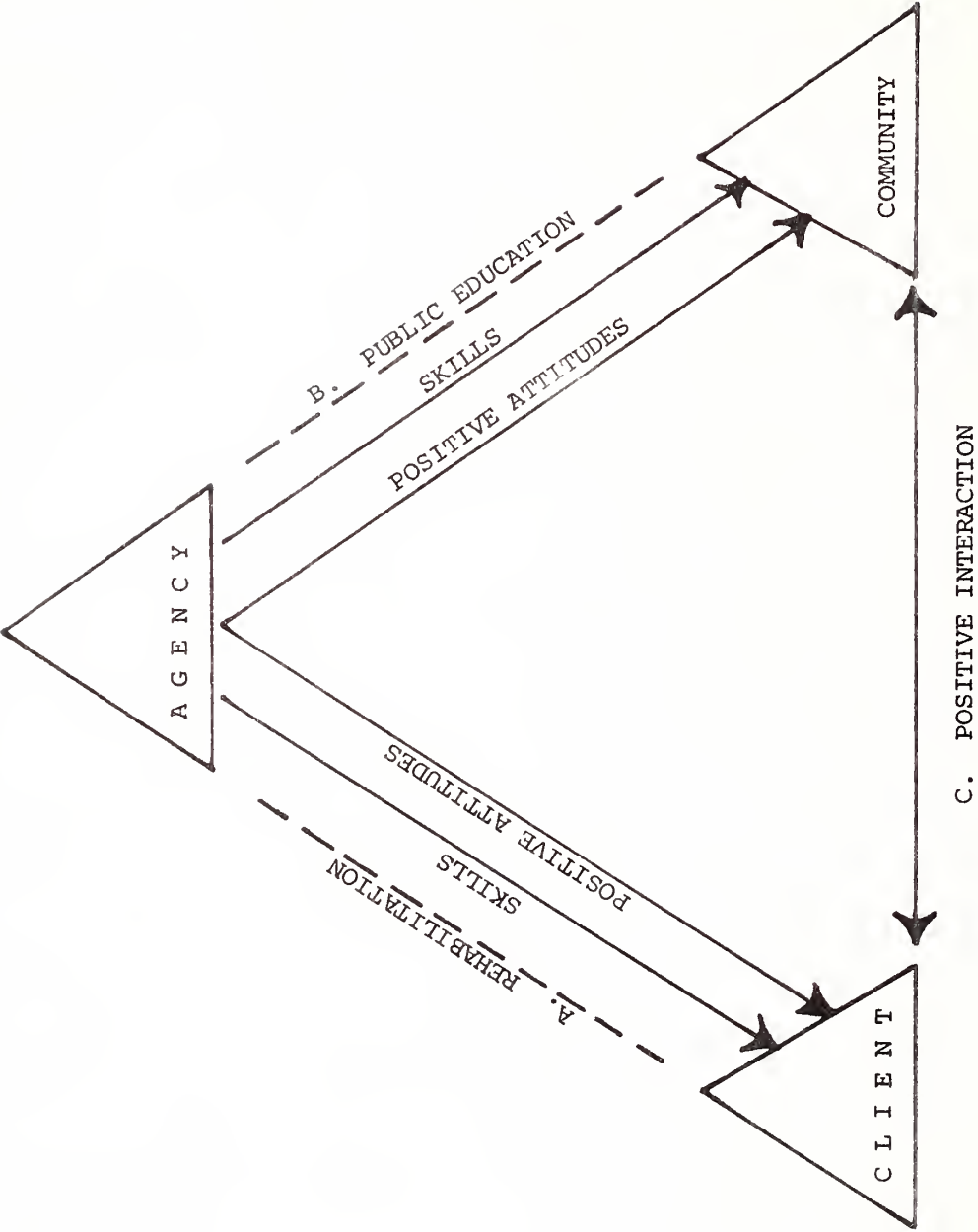


Figure 2.

In this diagram, each of the sides of the triangle - A and B - are a vital part of the process. You will note each of the sides contains two prongs, skills and positive attitudes, which are equally important. They are delivered by different methods and by different people to a different market - the client on one hand and the community on the other.

Whether the client is requiring vocational skills, social skills or skills with low vision aids, attitudes must be positive. He must persist with the training or the use of the particular aid if it is to be of benefit and there must be follow-up by the professional.

Likewise, his community, his employer or his social peers must learn to accept that a visually impaired person with proper training, appropriate aids and equipment is well able to function independently. It must be seen that this is accepted, so that the confidence of the "newly rehabilitated" person is fully maintained.

We are all only too familiar with instances of a thoroughly trained visually impaired person being so cosseted by his family, or wrapped in a totally unnecessary "protective coating" by his employer, that many of the skills and the newly acquired confidence soon disappear.

Undoubtedly, some support by the community may be required, and this is the difficult choice that non-handicapped people have to make on a continuing basis. I suggest it may be better to apply a protective coating that is too thin in the early stages, rather than the converse.

The majority of rehabilitation agencies provide appropriate training in specific skills or in the use of specific aids, but few have the resources or even attempt side B of the triangle - public education.

These programmes are not normally accepted by various governments for financial support, although the Royal Blind Society does have a Public Education Officer subsidized under the Handicapped Persons Assistance Act. Unfortunately, such public education programmes are far less likely to attract community financial support. One cannot imagine a fund raising campaign being based on the need to educate a group of industrial relations or personnel officers from industry.

It may be beneficial at this point to outline some examples of the public education programmes provided by the Royal Blind Society. It would be hard to assess which particular programme is the most successful, and in placing them in the following order, I am not attempting to grade them in any way.

Firstly, public education for professional, semi-professional and public groups is conducted by a competent visually impaired person who was formerly a trained technical education teacher.

This officer has a thorough understanding of the role of the RBS, its philosophical attitudes, its training and other programmes. He is personally able to demonstrate very clearly that these programmes and their benefits are available to all visually impaired people, not only those who are totally blind.

As we all know, this is a popular misconception which prevents many people seeking services provided by agencies for the blind. We have very positive feedback from the courses which are regularly conducted at the RBS and similarly from those lectures and courses conducted throughout the State. It has shown us that you will derive a positive response from a positive approach.

Secondly, the RBS has for many years regarded any information and direct communication with younger school children as being a very sound investment in understanding blindness for the future, and we have, on a continuing basis, talks and experience programmes under blindfold for the children at as many schools as possible. These are not fund raising activities. In this instance, we have two blind information officers who visit schools regularly, demonstrating the capabilities of blind people.

Thirdly, of more immediate benefit have been a number of employer education seminars conducted by our vocational counsellor and other training officers, including the public education officer. These have been successful, and during 1979, we helped pave the way for twenty-five patients to find suitable employment. This programme of course operates in regular consultation with the Commonwealth Public Service Board, Commonwealth Rehabilitation Service, Commonwealth



Employment Service and the New South Wales Department of Industrial Relations.

Undoubtedly our recreation programme has elements of public education, in that various community, sporting and recreation groups with which we are involved learn to have some understanding of the real capabilities of blind people. The most graphic example of this has been the long term acceptance of blind and visually impaired bowlers by bowling clubs generally. In a much more limited way, we are finding the same with sailing and even to some extent, golf.

Informal programmes such as these are not really designed as community education, but are of tremendous benefit with spin-offs such as our highly successful Child Development Unit which has ceased segregating blind and visually handicapped children and is now using its endeavours to have them placed in community kindergartens.

There is a vast and continuing need for such attitudinal changing programmes to be undertaken by agencies wherever possible. We learn from a report of the Anti-Discrimination Board, New South Wales, 1979 (1.23 para.) that: "People with handicaps are almost invariably dealt with on the basis of assumption about their handicap". The more people who become aware and have an understanding of the effects of handicap, the greater the general acceptance will be.

Unfortunately, where such assumptions exist and are communicated by involved professionals, not only to handicapped people, but also to the community, the effect can be far more damaging and detrimental than the mere lack of awareness by the general public. Low vision clients are rarely an exception and so suffer in this way, although in many instances, an individual's functioning may not be greatly impaired.

In the past, people with low vision have been discriminated against at all stages of education and in many areas of employment, particularly as confusion exists between visual acuity and functional ability. I suggest that all agencies and professionals together with consumers, should make a concerted effort against this most damaging discrimination.

This, where implemented, has proved very successful and gives hope for the future. Some examples are:

- efforts by the Commonwealth Service to improve access to competitive entrance examinations and to remove rigid guidelines relating to medical definitions for permanency;
- the production of "Who's Handicapped?" by Telecom Australia and Telecom's willingness to distribute this film widely;
- growing awareness in the New South Wales State Public Service that pessimistic prognosis should not necessarily preclude prospective employees who should, for preference, be judged on current performance;
- the New South Wales Government's intention to amend the Anti-Discrimination Act to include handicapped people at the Autumn session of Parliament this year;
- greater willingness on the part of post-secondary institutions to cooperate in the assessment of low vision students' potentials to succeed in educational courses.

## A SUBJECTIVE VIEW OF SERVICES

Claude Farrow

I would like as a preamble to comment briefly on three speeches that were made yesterday. Firstly, I want to thank John Blanch for delivering half of my address yesterday and, at the same time, to reassure him that I agree entirely with the comments that he made and the observations that he presented to you. Like him, we have all been through the process of shock, depression and ultimate acceptance, and like him I have been favoured by a loving wife - he has had his for thirty-eight years, I have had mine for over fifty-six.

The next speaker was Dorothy Judd. Unlike her, I didn't write a paper and give a different presentation at the conference. I haven't written a speech at all! You will just have to take what I say today as off-the-cuff and sincere. Finally, I would like to thank our good friend, Sam Baker for the marvellous address that we were favoured to hear last night at the conference dinner.

Today I am not giving an address or a speech, but a talk. In this little talk, I would like to refer back to John Wilson's paper at the opening session of this conference. He referred to the seven "C's". I propose to add another "C" to that and make my theme "communication". To illustrate this, I have the permission of certain distinguished gentlemen in the audience to tell of a little incident that happened to me fifty-odd years ago.

I lived in a district where a prominent former Prime Minister of Australia, William Morris Hughes also resided. The local Council advised him that they would like him to open a health centre in the district. As I was a councillor, I was asked if I would prepare a speech of welcome. I went to great pains over this. I prepared a magnificent talk, extolling his virtues as a man, as a resident, as a parliamentarian, as a Prime Minister and as a member of the Royal War Council in London. At the conclusion of my address he took from

his pocket two copies of his speech, handed one to the press and then took out of his other pocket his hearing aid which he plugged in. Now I take that as an extreme example of a lack of communication. I wouldn't like Margaret Lawrence or any of the staff of the Low Vision Clinic to think that I bear anything like that against them. But I do want to purposely and deliberately criticize the Low Vision Clinic. I am doing it advisedly, because although I appreciate to the full the magnificent work that they are doing, I do think there are some gaps.

I think that I can relate that firstly to another personal experience I had some weeks after I first came to the clinic. I was invited to a pre-Christmas luncheon party at a local town hall. I was introduced to two totally blind gentlemen and I sat with them during the luncheon. With what peripheral vision that I had, I observed that *both* of them were managing their casserole dish with their fork up-side-down in their right hand and feeding the fork with the fingers of the left hand. I was horrified. I left the meal early, took a tram home with my tail between my legs and thought: "Now Farrow, is this what you are going to come to?"

The following day I approached a senior member of staff at the clinic and told her my experience. I then, and only then, was told how to arrange the food on a plate, how to pour tea into a cup and not the saucer, how to avoid knocking over a cup of orange juice, in other words, how to eat a meal as if I were completely blind. Now, in my opinion, that information would have been much better given to me before I had that experience at dinner.

I then spent some time at the Kooyong day centre during the following year. I learnt to touch type and I made a string basket that my granddaughter claimed to put her pot plant in, and a pair of moccasins which another granddaughter claimed to take to England. I also spent weeks plaiting a string belt which my grandson claimed and I eventually made a basket for my wife. In all that time, I felt that these were just time filling occupations. I felt that a lot of the centre's work could have been directed to better advantage. In my case, I didn't want to just learn craft work. I did want to, and appreciated very much the typing which gave me a means of communication.



Having said all that and criticized to that extent, I will speak about the other side of the coin. My introduction to the clinic was then to Sister Biggs, now Margaret Lawrence. I was impressed by the very friendly staff and cup of coffee that was given to me in the waiting area. I was then taken into an office and subjected by the administrator to a very thorough and far-reaching questionnaire which covered every aspect of my living since my disability. I appreciated that to the full, and felt that I was in good hands and I was going to be helped as much as possible.

My next move was to the optometrist. I am glad to see Jan Kitchen here, because she was the person who gave me a most thorough and meticulous optometrical examination. She prescribed an addition to my glasses and provided me with magnifying aids. I can't speak too highly of the attention and the care that she gave me.

I was then referred to the Kooyong day centre. I received instruction in the various aspects of craft work, which I felt were just "fill-ins", but still I appreciated the amount of work that was being done by the craft workers. Craft sessions were attended by groups of elderly ladies and it was like a club for them. They sat down and did their papier mâché or weaving and talked about their grandchildren, what they saw on the television or what pictures they had been to. This was, I am sure, appreciated more by the people who like that particular type of activity.

I was then introduced to the social worker and again I can't help feeling how much the social worker helped me in forward planning. I was introduced to the various benefits that were available to a legally blind person - although I would prefer to be called visually handicapped - and from there I feel that the social worker assisted me greatly.

Last February, after that particular year, I attended a luncheon meeting at the centre and I can assure you, that was quite a different meal. I thoroughly enjoyed it and I think I was one of the first to volunteer to assist in forming a group later on. But more important was what came out of that dinner. I was presented with a booklet, Dodging Ditches, written by the Rev. Arthur Wilkins, a blind person.

I want to say, frankly and sincerely, that the information that I got from that book was invaluable. My wife shed tears reading it to me, but I think that a lot that was contained in the book should have been shown to me by the Low Vision Clinic people. I felt that it was wrong for me to have to be given a book to find out these things.

As a result of this, and in preparation for this conference, I asked a senior member of the staff to take me around the clinic and day centre and show me what I had missed. I was taken on a conducted tour and, for the first time, I realized that there was a fully equipped physiotherapy department, provision for physical training, a music room, a theatrette something like this hall and many facets of the building that I hadn't seen or heard of. I was introduced to members who arrange outings for the blind, I was introduced to members who conducted interstate and overseas trips, parties and concerts. I learnt for the first time of the sporting activities that were available to the partially sighted and finally, I was taken on a conducted tour of the Aids Advisory Centre, where for the first time, I was shown writing aids, writing frames, push button telephones and aids to daily living that I have never heard of. I was shown a faceless clock, articles for domestic use, such as safeguards for breadsaws and many, many devices that I hand't been told about. Now that is critcism, and I hope constructive criticism.

In summing up, I can only say that the Low Vision Clinic, which was so brilliantly conceived and is so beautifully and warmly conducted, does provide a magnificent service to the visually handicapped. However, in my humble opinion, it could be improved by better communication.

## A SUBJECTIVE VIEW OF SERVICES

Carolyn Maclean

I will begin with a few biographical details that will enable you to place in context what I say during the rest of this paper.

Two and a half years ago, at the age of forty-one, I lost my central vision. In the same year I graduated from Melbourne University as a psychologist. I was also recently divorced and, for the first time in my life, I became self supporting. My battle to remain a normal person has therefore been a struggle and I greatly needed the services of the low vision community.

My university years had clearly shown me that my strengths lay in writing, researching and therefore probably lecturing, and before I graduated I was applying for lecturing jobs. When I lost my reading vision, the ophthalmologist said to me in his quiet, gentle voice: "I think you ought to look for a talking job". That was like a sentence of death to me because, like any perfectionist, I lived with a lot of personal anxiety and guilt within myself, I was rather scared of other people, and I was positively hopeless as a conversationalist. Literally, I was much more suited to reading and writing and experimenting with people than working with them.

You can see me clearly and I would like to be able to see and get to know you. Suppose you and I happened to stand side by side in the lunch queue. Even if you were two feet away from me, I mightn't be able to see you clearly unless there was strong light. So, how can I get to know you, given that I have lost my physical capacity to see you clearly?

First of all, I think I will see you with my curiosity and will to know you because I love people. Also, I will see you with the common interest that we share in being here. I will see you with the tertiary education that I have and all the understanding of human

nature that it has given me. I'll see you with my own image of myself. I will see you with my intelligence. Most of all, I will see you with my highly trained communication skills. I'll notice the words that you use, the words that you don't use. I will notice whether the content of what you say is all about information or whether some of it is about yourself and other people. I will notice whether your voice is tense or whether your voice is relaxed. I will notice what you are doing with your hands and your body.

I counsel and I teach people daily and I ask for feedback all the time. The feedback that I get tells me that the people that I talk to very much feel seen and understood by me, and that I don't miss much. And that's what I would expect to happen between you and me. Because the truth is that you and I never see anything, we always perceive using the full range of the abilities that I have just described, of which eyesight is only one.

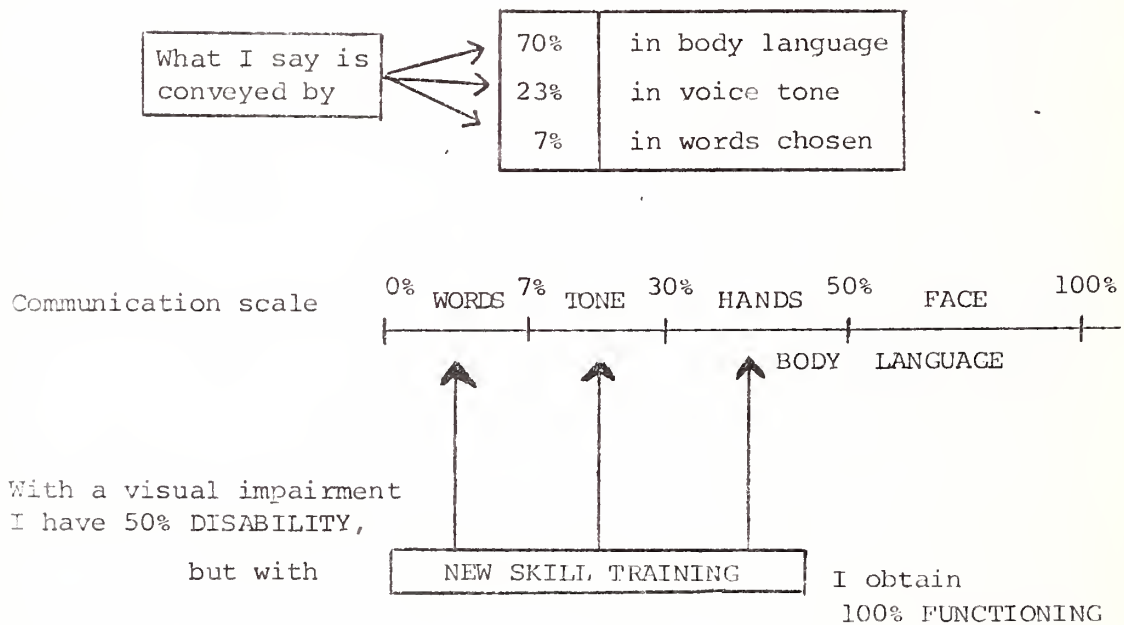


Figure 1: Meaning conveyed by verbal communication and body language.



Nevertheless, I would like you to recognize that I am at a great disadvantage, and that my seeing you clearly represents something of a feat.

One study found that 70% of the meaning conveyed would be found in the body language with which you said it. The set of your eyes, the furrow on your brow, the smile on your face, is where the real meaning of what you are saying to me is mostly to be found. A further 23% is conveyed in the tone of your voice and only 7% in this study was found to be carried by the actual words used (Figure 1, p.309).

Now these percentages can vary. If I said to you the name of my daughter (who was killed seven years ago), "Kerrin", with a smile on my face, you would know what joy she was to me. And if I said "Kerrin" with exactly the same tone of voice but you noticed tears welling up in my eyes, you would know I am still mourning her. So that all the meaning of my communication to you would have been lodged purely in my facial expression, and none of it in the word I said or the tone of my voice.

So looking at the horizontal line in Figure 1, how is it that you feel seen and understood when I miss so much of what you say? In the first place, I am now a highly trained listener and I am able to extract a vast amount out of the words you use. I notice the pauses, the timbre of your voice, even the words not used.

I pick up everything you give away about yourself from the tone of your voice and, with my peripheral vision, I am still able to observe your gross body movements and your hand gestures. I take all that in too. So that I have something like a 50% ability to read your communications to see what you are saying, and maximizing the 50% that is available, somehow I achieve about 100% functioning with a 50% disability.

I recognize that in my ordinary life I operate all sorts of ratios of functioning to disability. For example, I am only about 10% disabled when it comes to cleaning up my house. But I award myself a whole 100% loss of functioning and I get a cleaner to do it, so that I have a 10% disability and 100% loss of function, and I say it

with a smile on my face!

On the other hand, I would say that when it comes to house painting, particularly painting louvre doors or cupboard doors, I probably have about 90% disability, but because it is so expensive to get painting done, I have found that with my 90% disability I can still operate on about 95% level of functioning as a house painter.

As a learner, (although now I can't read books), I have many books put onto tape so that I might say that I am only 50% disabled as a student or a learner and yet, because I am still in the denial phase as regards not being able to read books, I am 100% dysfunctional as a learner instead of 50% disabled, simply because I refuse to listen to taped books. So what I am saying is that I don't see a necessary connection between loss of vision and loss of function. How much functional loss I suffer depends upon my motivation and whether I can devise new means to recapture that function.

Sometimes I think I can do this for myself and in many instances, such as learning communication skills, I must have access to people who have higher order skills or technology that I myself don't possess.

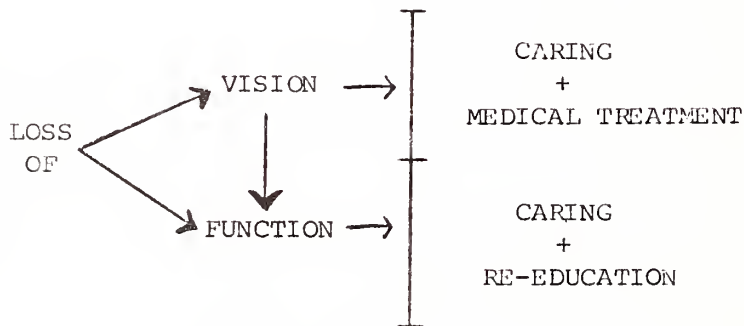


Figure 2: The two categories of helper for visually impaired people

You, the audience of care givers, I think, fall into two categories: those who deal with the actual loss of vision, and those who deal with the loss of function (Figure 2, p.311). I want to put on record that I have experienced a lot of caring from ophthalmologists and optometrists as they have tried to arrest and treat my eye condition and prescribe aids that would maximize the vision that I have, and that it has been very important to me not to be treated like a pair of eyes that exist without being attached to a feeling person which I always am. And what the Low Vision Clinic and the Royal Victorian Institute for the Blind have in abundance is caring staff and caring volunteers and, as for their re-education programmes, what they have is excellent and what they haven't, which I will describe, I would wish to see planned for the future.

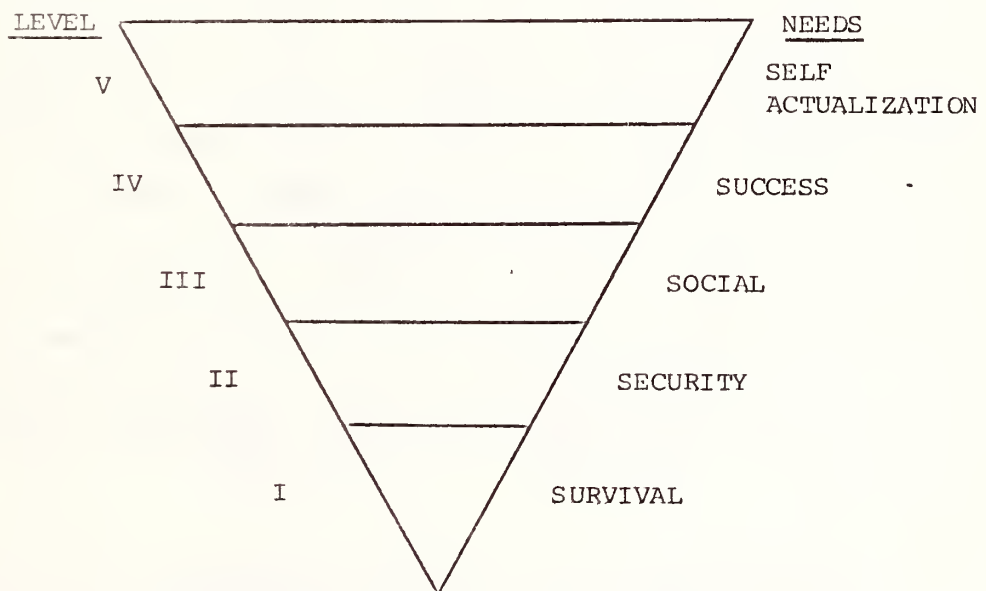


Figure 3: Maslow's Hierarchy of Needs

I will employ Maslow's hierarchy of needs model to distinguish between those services that already exist to meet the needs of the blind and those still missing (Figure 3).

First of all, let me introduce Maslow. Maslow is something of a heretic in psychology. Instead of following the main stream and dutifully studying neuroses, psychoses and profound personal disturbances, or going across and measuring the eye blinks of cockroaches and the number of rat droppings, he studied normal people and, even "worse", he studied highly successful, happy people and from this study he developed a model of human nature. He said that our behaviour is always an expression of one of our needs and that we have five levels of needs.

At the bottom we have needs for survival: food, shelter, warmth. When those are sufficiently met it releases energy to meet our security needs, freedom from danger and hazard, freedom from fire and famine and disease. (See Figure 4, p.314).

If those two classes of need are sufficiently met then we look around and say "what else is there?" and we make an effort to get our social needs met. These are our belonging needs. Maslow says we have a need for our existence to be recognized in the first place, need for affection, need for love, and that successfully meeting these needs releases energy to work on a higher set of marks - those for achievement. He says we all want to make our mark on the world, we want to achieve in our work, or in our hobby and leisure interests. The end result is that at the top of the pyramid, you become what he calls "a self actualizing person", one who is using all his/her potential and experiencing what he calls "peak experience", the "aha" experiences.

Some of my survival and security needs were to be able to cross the street safely, to stop having falls in my front garden, to find new ways to keep tabs on my finances and to find a means to keep up with my professional and personal correspondence.

These level one and level two needs were very well met by the Low Vision Clinic and I was put on what I would call the low vision conveyor belt. In my shocked and depressed state, the Low Vision



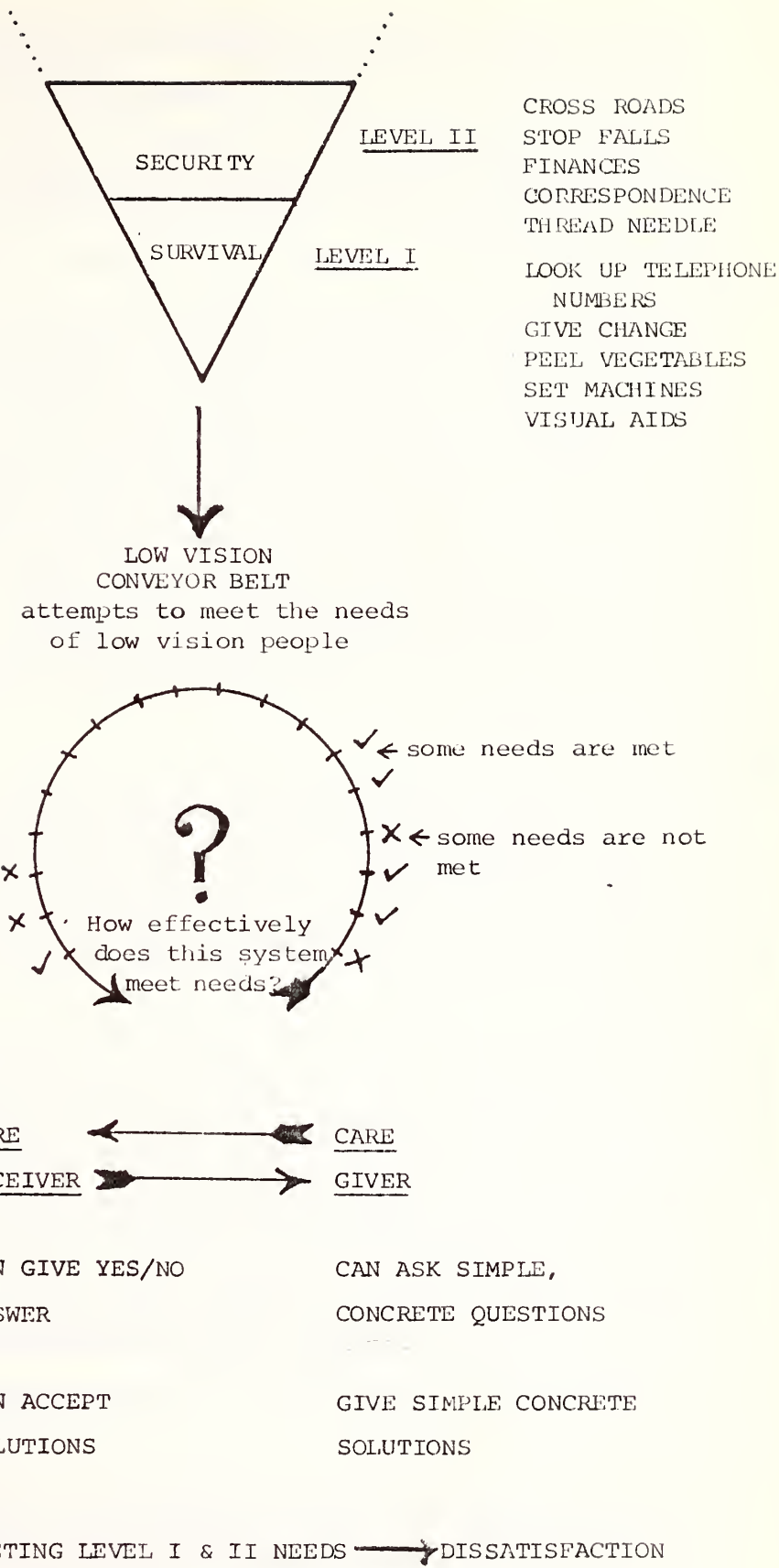


Figure 4: Maslow's level I and level II needs are simple to define and are fairly easily met.

Clinic reached out to me and said: "We have made a series of appointments for you with the optometrist, social worker, the occupational therapist and the mobility officer. Would you accept this"? In my shocked and passive state it was simply easier to say "yes" than to say "no".

I spent a whole morning at the Low Vision Clinic being put in touch with all the aids that might help me, finding out from the social worker all the support that the social system has to offer me. The occupational therapist had a vast list of questions and we ticked off the things I could do and the things that I now couldn't do, and found answers to those with which I had difficulty. The mobility officer showed why I was having falls and how to cross the road, and both she and the occupational therapist came to my home. And the net result of all this was that I regained all normal functioning for my level one and two needs.

This is understandable, because the care giver has only to ask a limited number of simple concrete questions and can easily provide acceptable solutions. The care recipient has only to say "yes" or "no" and by and large be grateful that there are answers to the new problems.

What is unfortunate about restoring so much basic function, is that Maslow believes that when level one and two needs are satisfied, no satisfaction is felt within the person. In other words, meeting level one and two needs simply sets up a state of dissatisfaction so that now I do know how to give change, I have stopped being thankful for that, and I am more concerned that my lack of reading vision which prevents me from applying for highly salaried jobs. Once again I simply take for granted that I can peel vegetables and cross the road safely.

What I am saying is what you already know - that material security or even material comfort does not bring happiness to we humans. Happiness seems to come from our relationships with others and from being able to do useful and valuable work and getting recognition for this from others.

Our feelings of well being come from meeting our level three and four needs. (See Figure 5, p.317).

My social needs after I lost so much eyesight were to know myself, to like myself, to be able to relate to other people and to be a good conversationalist. Let's examine each of these in turn and in detail.

Any significant loss of eyesight is going to entail a destruction of the person's identity to a greater or lesser extent. If I have been a sportsman, a reader, a car driver, someone who has been good at handling machines, someone who has taken pride in self-sufficiency and independence, someone who is a doer rather than a talker, then I will be devastated by losing these abilities along with my eyesight. Loss of eyesight will entail a destruction of the old identity and create the need to build a new identity.

Therefore the question "who am I?" is very pertinent to anyone who has lost sight. This is an excruciating and painful question that has to be answered. People who have impaired or no vision need to be able to like themselves, they need good self-esteem because believe me, if you are blind or partially blind, you carry stigma. Sighted people have a horror of this condition because they fear that should it ever happen to them, they could never face up to it. And so the presence of a blind or partially blind person is a real threat to them. In order to avoid arousing this negative reaction from other people, I need to feel good about myself, I need to be clear that I am a likeable, competent, adequate person looking forward to the future. My guess is that if I am a low self-esteem person who suffers a lot of guilt and anxiety, because I am full of self-blame, then I will be asking some sighted people for pity and that will evoke the horror response.

A third fundamental need of a blind or partially blind person is to be skilled and comfortable in relation to other people. The basic world of the blind will be other people, rather than the world of information and objects to which we have limited access. The investment that the blind have had in the physical world can be transferred to

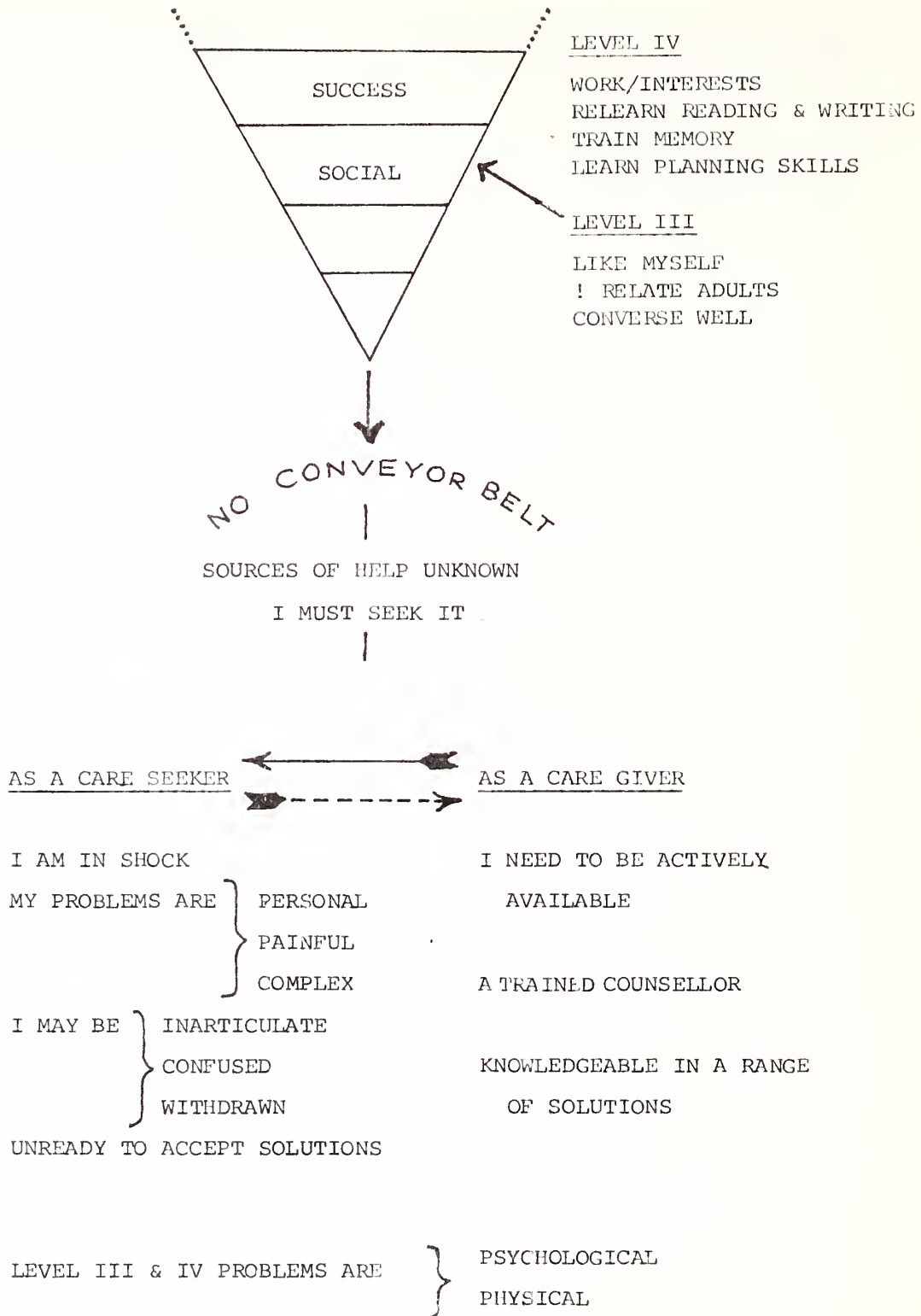


Figure 5: Level III & IV needs are more difficult to meet; there is no "conveyor belt" available to visually impaired people to provide for those needs.



the personal world. Blind and partly blind people need good communication skills and these can be learned, just as reading and writing can be learned.

Fourthly, blind and low vision people need to be good conversationalists. This point is so obvious that I won't labour it, except to say that it is a skill that can be taught.

Referring to Figure 5, you will observe that this time there was no low vision conveyor belt. I was totally alone. There I was surprised at my academic bolt hole which would have hidden my defects as a person, faced with a life which was going to expose them. A large part of my identity had been annihilated. I was very dubious about my worth as a person - I was demonstratively poor at relating to other adults and I was a lousy conversationalist. If I was all that two and half years ago when I lost my sight, how come I am standing up here talking to you now? The happy, secure and competent person I am now is largely the result of training in communication and conversation skills that I was lucky enough to stumble upon. I now teach communication and relation skills, but what distresses me is that finding the training was fortuitous and adventitious. It was my background as a psychologist that enabled me to know what I needed and to recognize when I found it. I was able to rehabilitate myself only by a combination of privilege, luck and tenacity.

I ask you to think carefully about how well your organization is meeting the social needs of the people in your care. I offer you my services as a consultant in this area.

Turning now to Maslow's level four needs, those for achievement and success, my own needs are to regain reading and writing and to train my memory to hold large chunks of information.

Again I am alone. There is no help that I know of available to me from the Low Vision Clinic or the Royal Victorian Institute for the Blind. It is frustrating for me to know that these same problems have been faced by every blind university student. Unless I assertively extract the needs of successful blind students from the low vision community, and go and consult those students individually, and

learn techniques from them, I must discover all these skills for myself. It is hard for me to understand why somebody who works for the blind has not done a thorough survey of how these students learn and set it out in a systematic fashion, so that I can consult this record, instead of having to put together for myself a picture of how to operate without reading sight.

It is also hard for me to understand why there isn't a special person in the low vision community to help me with my work needs, because many of us who have sight impairment are still working and there are initial and probably continuing problems in being visually impaired and carrying a normal job. For example, I am losing the ability to read my large print notes. How do I teach for three hours at a time, or a day at a time, or sometimes a week at a time, without detailed notes. This would be the sort of problem I would have liked to have taken to some specialist within the blind community for help. Instead by luck a kind friend did research for me and discovered that a combination of machines could give me an auditory prompting system that would be invisible to my audience. It is my good luck that my doctor has a relative with no central vision, and he tells me that in the United States special glasses have been made which can focus peripheral vision and restore reading. His relative has one of these contraptions, so that I live with the hope that some of my work capacity may be restored if I can track down this visual aid.

I want you to know that I live with a great deal of fear and uncertainty when it comes to my level four achievement and work needs, and that if the services of the low vision community extended to level four, that this need not be so. Many people before me have devised ways to stay workers and achievers. It is just that their coping strategies have not been recorded and made systematically available to newcomers like myself.

In respect of my level three and four needs, because I have been entirely on my own it doesn't surprise me that it took me about two years to understand and meet my social needs. I am expecting that understanding and meeting my work needs and achievement needs is

going to occupy the next couple of years.

Returning to Figure 5, it is understandable that the low vision community in Melbourne makes no provision for level three and four needs, because the problems on these two levels are not only physical but are also psychological. As a care receiver I am in shock and my problems are painful, personal and complex, and therefore I may be inarticulate, confused and withdrawn. Furthermore, I may be unready and unwilling to accept the obvious solutions.

The care giver needs to be actively available to clients, a counsellor skilled and knowledgeable in a range of solutions. Nevertheless, I hope there will be a time when the Low Vision Clinic adds these two new weigh stations to its conveyor belt and the rehabilitation opportunities offered to the newly blind person are made more complex, systematic and integrated.

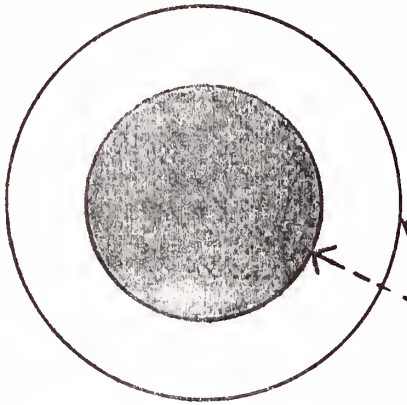
I want now to look at how delicate and problematic is the restoration of function at the social and work level. (See Figure 6, p. 321 ).

If you ask newly blind people what troubles them most, they will tell you that they are at a loss to know how to meet people when they can't tell whether they like the look of them or not. How can they greet people when they can't tell whether they know them or not? How can they remember names when they can't see faces? In general, how can they handle a large group of strangers? These are frightening losses and, when I was in that situation, I felt like a piece of gruyere cheese, holed, bombed and devastated - crippled in fact.

You will notice that what remains is an ability to deal with one or two people at very close range and so my social functioning might well be restricted to those social situations. I might learn to say to myself and others: "Look, I really don't enjoy big crowds, I much more enjoy private, intimate conversations". If I do that, those new black holes will become permanent in my way of life and I will become permanently diminished by my disability, because I have to avoid those situations in order to keep up the pretence.

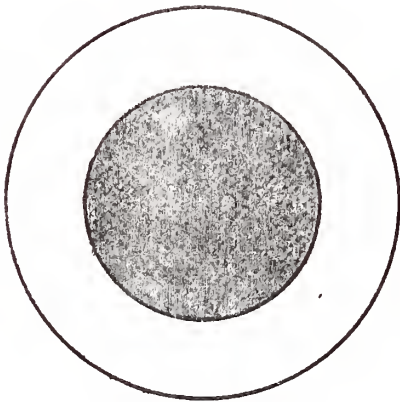
How does the system retain its integrity in the face  
of an absolute loss of function?  
It can grow a new function of equal perceived value.

I

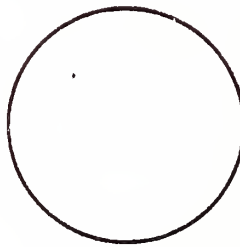


The "whole" person,  
but with  
loss of broad  
research ability  
- an impairment of  
of function

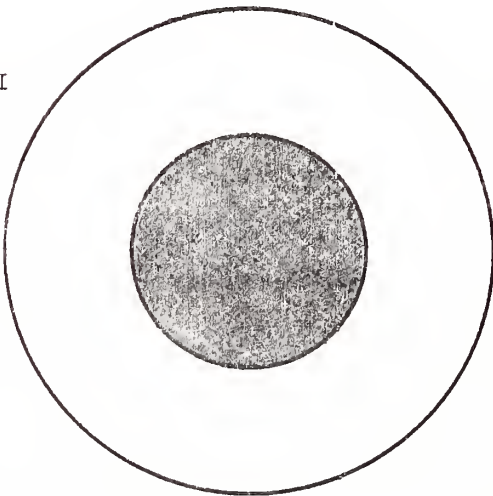
II



Gain of public  
speaking ability  
- a new function to  
add which is of equal  
value to the impairment



III



I can do less research in  
psychology but teach it more  
effectively  
- system adds new function so  
that the system stays the same  
size (the minus and plus are of  
equal value).

Figure 6: Restoration of function at the social and work level.



When I attended the Elizabeth Kübler-Ross grief workshop and lived with a group of eighty people for a week, it was a terrible, terrifying and humiliating experience to me because I didn't tell them that I didn't have full vision. As the week went on I became more numbed, withdrawn and depressed and it was a very punishing experience for me. In fact, every loss of function is realized through a first painful experience.

Referring to Figure 6, I will experience one of the class of angry emotions or one of the class of hurt emotions or one of the general fear emotions. That puts me at a choice point, whether I know it or not. Because, if I deny or repress that very negative emotion, there I'll stay stuck and probably avoid that same situation in the future. In other words, I will create a black hole. But if I can face up to that painful situation and either relive the emotions in my mind or talk about them or even write about them, then the likelihood will be that I pass to the next stage. There is a real likelihood that I won't pass to the next stage. It is vastly easier to deny that you have had a painful experience than to replay it again and for most people, replaying an experience means sharing it with a friend.

We have developed a whole army of professional friends called psychologists and psychiatrists and social workers simply because listening to another person's inner pain takes not only good will but skill.

Imagine if you lost your ability to drive a car. For many of you that would be a huge blow to your masculinity and very painful to talk about, for in talking about it you would feel very exposed, very vulnerable. Truly one takes a big risk in sharing one's private agonies with another person, but I know that until I find someone with whom I am willing to share the humiliation of not being able to read print, I am going to stay stuck at not being able to read books and being unwilling to read books on tape.

On the other hand, I have been willing to talk over the dreadful Kübler-Ross workshop experience and so I have entered the problem solving phase, because when I shared it with a friend, she said: "There is a simple answer to that: you just tell people you can't see

clearly and ask them to give you their name as they approach you and that works beautifully."

I have repeatedly tested out that solution with different groups and everybody feels comfortable about announcing their name to me.

Referring to Figure 7 (p.324), I have now eradicated the black hole concerned with handling live groups of strangers. I believe the problem solving phase can restore most lost functions.

However, some functions are absolutely lost with diminished vision. In Figure 7, I am suggesting that no necessary nett loss of function may be sustained if the person can replace one lost old function with a new function that has equal value. For example, what I have lost in ability to write, I have compensated for by a new-found ability to express myself verbally, and what I have lost as an academic lecturer, I have made up for in a new-found ability to operate as an experiential teacher.

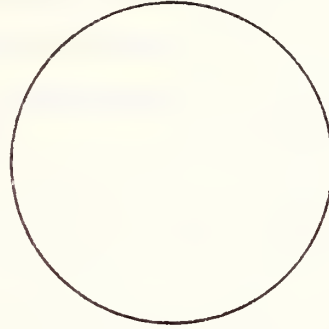
I suddenly realized that there is something horridly absent from this paper. Here I am telling you what it is like to be alone with really no resources to meet my social and work needs. I am describing this in calm, logical, ordered words and this is false.

To be without eyesight is to experience hundreds of thousands of moments of terror, despair, anger, bitterness, hopelessness, humiliation and feelings of aloneness. To really do justice to what it is like on levels three and four without normal eyesight, I would have to use stinging, lashing, biting, whipping words.

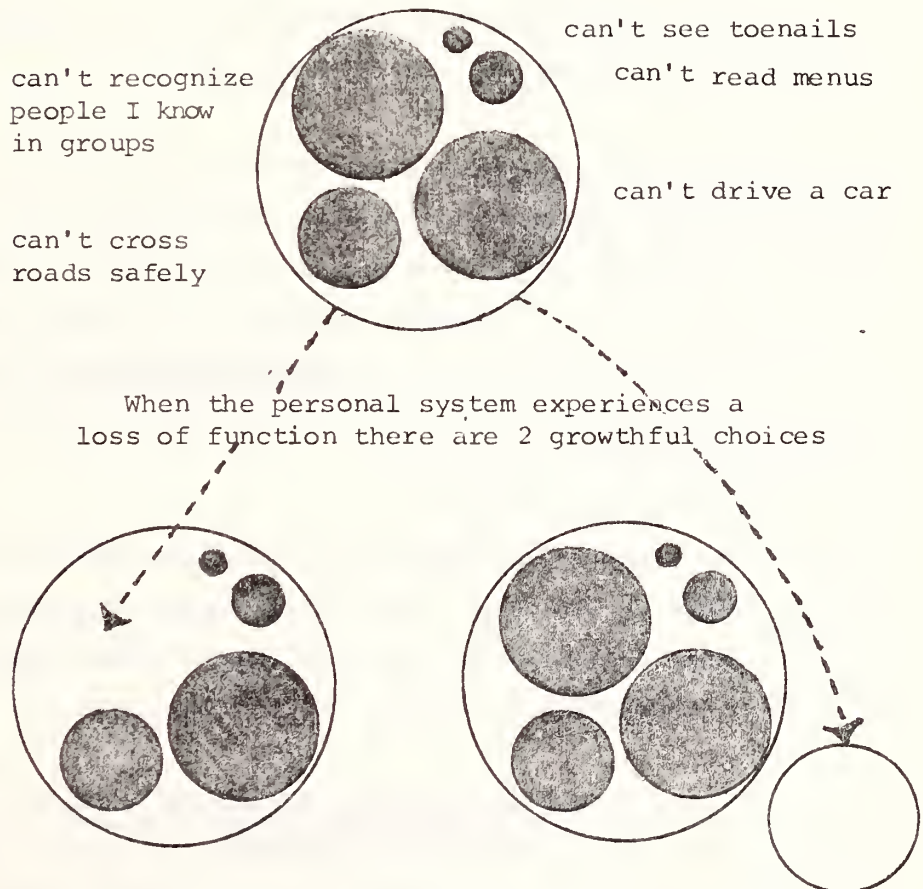
Level one and two needs are, if you like, my animal needs. Just when my needs as a full human being start at levels three and four, the low vision conveyor belt tips me off as if it is saying: "That's it, we have come to the end, you are on your own." Because it wasn't offered to me, I am now doing a course in grief counselling to investigate and become trained in what I myself missed out on and needed. *Yet it is probably this very process of having to be my own rehabilitation counsellor that has moved me from being a self-doubting*

I feel like a universe with black holes when I realize I have lost functions. I feel like a piece of gruyere cheese; holed, bombed, cratered and crippled. I am a puzzle with lost pieces.

Fully Functioning Me



Me with lost functions, holed  
with painful, new, unwanted, excavations



1.  
Regain the lost function  
with a compensatory strategy  
That is, be assertive and  
ask everyone in a group to  
say their name as they  
approach me.

2.  
Grow an entirely new  
function to replace an  
irrecoverable lost function  
That is, develop pleasure in  
long distance city walking to  
replace lost driving capacity.  
I become physically fit, and  
do not feel diminished.

Figure 7: The use of problem solving to restore lost functions.

*and fragile person, an academic isolate just two and a half years ago, to being a robust and self-accepting person now.*

*What I lost in eyesight I have gained in insight.* Whereas before I had a very hesitant vision of the surface of life, I can now maintain a pretty steady gaze on the interiors of people and life. That's vastly more satisfying and comfortable.

Losing eyesight had made me a stronger link in the chain of life and I am willing to take more from people and to give more. In fact, just give me another year or two and I will run a course for you all on improving your memory, that being the next skill that I must acquire. (See Figure 8, p. 326).

To conclude, I want to emphasize the need for two extensions to the low vision clinic conveyor belt of services.

Firstly, I believe you need a place where the newly blind can look at themselves and their social needs. Some clients need therapeutic care or counselling, either one-to-one or in groups. I believe many clients would benefit from the availability of re-education programmes in self-awareness, self-esteem, communication and conversation. All these are skills which can be learnt and taught in groups by the experiential method.

I have a very great need to meet those who have solved the same problems before me and learn from them, rather than have to work on my own and keep re-inventing the wheel when it has already been done satisfactorily by others.

All these represent grave social handicaps and whereas the newly blind have no choice as to whether they will accept the disability of impaired sight, the Low Vision Clinic can offer clients a choice as to whether they will continue to carry the burden of their social handicaps. By offering these twin services, the Low Vision Clinic provides the opportunity for clients to let go of their psychological disabilities, so that they are freer to contend with their newer physical disability.



1. CONVEYOR BELT OF SERVICES  
NEEDS 2 EXTENSIONS

A. SOCIAL NEEDS

(A) COUNSELLING

1:1  
 GROUPS

(B) RE EDUCATION PROGRAMMES

SELF-ESTEEM	SKILLS
ASSERTIVENESS	"
COMMUNICATION	"
CONVERSATION	"

(C) ACCESS TO THOSE WHO  
HAVE SOLVED SAME PROBLEMS

B. WORK/HOBBY NEEDS

AS ABOVE, PLUS EDUCATION  
 PROGRAMMES SPECIFIC TO  
 WORK/HOBBY NEEDS

2. SUCH STAFF TO BE TRAINED IN COUNSELLING



Figure 8: How low vision services might be extended to more effectively meet the needs of low vision people.

I suggest that the second extension to low vision services should focus on the work and hobby needs of the individual. All of the above services may well be needed, but in addition, there need to be specialists who will research answers to keep people in the jobs they already have or help them change to new jobs. I believe that the staff who service both social and work needs should all be trained in counselling because they are working with people in shock, they are working with people's problems which are personal, painful and complex, and their clients are likely to be confused, inarticulate or withdrawn. Working with such clients takes special skills as well as an attitude of caring.

Losing one's sight is an amazing experience. It is like being born again. Every normal activity has to be relearnt. Do you understand that I am saying *everything*? Every normal activity has to be subjected to that relearning cycle. It took me a year to relearn how to insert a three pin plug into a socket. It took me two years to learn how to cut my nails, six months to find out how to pick a bunch of fresh flowers and not dead ones. I expect it will take perhaps three or four years for me to be able to process information auditorially now that I can no longer process it visually.

Where my relearning has been in the survival and security area (and my problems relatively simple and concrete) the Low Vision Clinic has been a valuable resource to me. But once my relearning enters the social and work area of my life and my problems are complex and, to some extent, involve a restructuring of my own personality, attitudes, and image of myself, I have found myself alone.

Is there something you can do about this?

## REVIEW OF SESSION

Fred Hill

Firstly, may I say from my own view point, a word of congratulations to the organizers of this conference for their foresight in developing a conference of this nature. I think it is a most exciting event and I do hope there will be a lot of follow-up from it, that it will point the way along useful avenues for the future and that good will eventuate from it in terms of the services with which we are concerned.

I do not propose to give a summary or review of what has been said in this morning's excellent presentations. Instead, I will pick out one or two points, to underline them and to add just a comment or two.

In the first paper about teamwork at the Low Vision Clinic, I was most interested in the reference to the patient's programming to ensure that the patient has access to the full range of services that this and other agencies have to offer. My enthusiasm for that comment was given a slightly different slant when Dr. Farrow said that he went through a period when he wasn't aware of all the services that this clinic has to offer. And he did this in a delightful way which he called constructive criticism.

I would also like to stress in this context the importance of other agencies. Too often, agency staff have a tendency to believe that they ought to attempt to be all things to all men or women, that within their own agency they should attempt to provide the whole range of necessary services. I believe that this is an unreal attitude which is impossible in practice. It is therefore essential that agencies act in cooperation with each other, to compliment each other, to coordinate with each other in the interests of providing the best possible service to meet the patient's need. If you don't have it and somebody else has, you should never be hesitant in bringing the patient to the attention of the agency that can provide the service. Jealousy often intrudes and human relationships, which we have heard a lot about, come into the picture very strongly.

Many speakers stressed the need to deal with questions and expectations and to help patients to recognize their own situation as early as possible. I believe that is vital as the first step towards rehabilitation. If this is not done effectively initially, then it creates many other problems which are more difficult to solve at a later stage.

Considerable reference was made to aids - their provision and the need for research, assessment and development. I couldn't help wondering while this was being said whether there isn't a role for a national institute of some kind which would be devoted to the development, assessment and research in the field of aids for the visually handicapped. In this country we do have a National Acoustics Laboratory, so there is a precedent.

Reference was also made to evaluation. I think that there ought to be more self evaluation by all agencies. Evaluation as to whether services are relevant is perhaps the top priority, with the second being whether services are cost effective. The third priority perhaps is whether services are adequate, so that inadequacies can be highlighted. Government assistance, which is becoming more limited because of economic constraints, will in future be more concerned with evaluation, and greater emphasis will be put on the need for agencies that receive government monies to either be evaluated or to evaluate more effectively the work that they are doing.

May I just mention that I would have liked to have heard a little more about volunteers. All our important agencies for the handicapped were initiated and developed by volunteers and all use volunteers quite extensively. I would like to see the role of volunteers supported and emphasized and, in days when there are insufficient funds to pay for enough full time staff, I think there is great scope for increasing our use of volunteers. I do not believe, as some agency representatives say, that it is really harder to recruit volunteers now than it was in the past.

Many of your clients are aged. This provides a double-edged problem for staff and should be earmarked for special staff training. The problem of visually impaired aged people requires



not only an understanding of low vision problems, but also the problems of the aged. I was impressed by Dr. Colenbrander's reference to the fact that often visually impaired old people are provided with an aid and then they tend to be left, forgetting that their real need is for social interaction rather than a visual aid.

Before I close, I would like to refer to the area of prevention. Too much of our vision in the past has been focused on the provision of services after the event has happened. I think the time has come when agency representatives should be concentrating more on prevention. Are we making an input, for example, to the National Safety Council? What kind of input are we making to industry in the area of accident prevention? I don't believe there has been much attention from people who understand the effects and causes of loss of vision during the working life. This has been mentioned at this session in another context - what are we doing about making the home safer?

As there are people from education departments, I would like to make one final point. In yesterday's Sydney newspaper, The Sun, was a report of a survey by the Australian Teachers' Federation of 320,000 school children which stated that many disadvantaged children cannot get the help they need. One area which they identified as being particularly deficient is career counselling. I am quite sure that what has been said generally in regard to education would refer as well to a great number of children who could be classified as visually impaired.



WHERE DO WE GO FROM HERE?





## REVIEW PANEL

Selby Steele (Chairman) John Blanch August Colenbrander  
 Paul Cullen Allan Freid David Hall Laurie McCredie  
 Derek Prinsley

*Mr. Steele:* This is the last major session, apart from the workshops, and I hope we might use it to try to look towards some of the future directions in which low vision services might develop, based on the discussion which has taken place over the last two and a half days. Before we begin, however, I would invite our two panelists who have not yet spoken to make some brief introductory remarks.

*Mr. Hall:* I would like to make a couple of observations. It is very important I believe for people such as myself to be able to attend a conference of this nature on a specific issue - one of many hundred issues facing the Department of Social Security. My own division of the Department controls \$180 million of tax payers' money, a significant proportion of the Commonwealth's total welfare budget.

Many speakers have referred to evaluation. Let us not use the word evaluation but instead look at reappraisal of services. There are services which began with a clear charter, a clear mandate, a clear objective, but in times of rapid change, it is crucial that we have adequately objective measures for being able to satisfy ourselves in a responsible way that we are continuing to deliver a service that is needed, adequate and efficient.

A personal point that I would like to make is that the great advantage of this sort of conference is in the personal insight that is given rather than the professional knowledge. I was very moved by at least two of the presentations and, along with another experience in the recent past, they have brought home to me how insignificant the alleged policy maker and administrator such as myself is in the scheme of things. It is the human dimension which is so important, particularly as we look at that hierarchy of needs.

Whether or not you believe in Maslow's hierarchy, there is undoubtedly a continuum of needs and so often our services address only one point along the continuum. Part of evaluation in the best sense of reappraisal is getting back to the true consumers, the only real experts. The rest of us can only know what comes back from those who experience the needs and the services given.

The conference so far has discussed needs and many key questions have been raised about identifying needs. However, we have not yet addressed the critical balance between services that are of a care nature and services that are of a rehabilitation emphasis. A most telling example of that was given earlier today, when we heard a personal plea for a better system of counselling and of service delivery that highlights the capacities of the individual and the opportunities of people to achieve within the framework of low vision.

Another personal comment is that I am astounded at the constant use of visual aids at a conference on low vision, although this may be part of the normalization principle. I was greatly heartened by the fact that a person speaking as a consumer with low vision used visual aids, but until that time I had been concerned - it struck me as rather anomalous.

There are two factual points that haven't been brought out. Firstly, 1981, as the International Year of Disabled Persons, carries with it one major activity of great significance to you and your agencies. It is a household survey which we hope will be paralleled by a survey of institutions, and hopefully there will be a very intensive examination of the needs of visually impaired people.

Secondly, very scant reference has been made to the Commonwealth Rehabilitation Service (CRS). I don't mind, because we have more than enough business already, but in response to an earlier question relating to interest free loans, these are available to people who are undergoing a specific CRS programme of a social or vocational nature. I hope you all realize the significance of the change in charter from November, 1977, where within the broad working age group, the CRS can provide rehabilitation services to anyone who is substantially handicapped and is likely to benefit significantly from that service. People involved in providing low vision services should

be aware that the CRS may be able to give support in providing rehabilitation, as distinct from care.

*Prof. Prinsley:* I would like first to mention the kinds of eye conditions of aged patients I have seen in recent months and then discuss in a little more detail two particular conditions which have not yet been dealt with at this conference.

The first consideration in the care of old people is to decide what is normal ageing and what is disease. Many problems of normal ageing can only be assisted, but a great deal of the problems caused by disease can be cured. So we must decide what is physiological and what is pathological.

Cataract is obviously a pathological condition and of interest over the last few years has been the rapid mobilization of cataract patients. In the past, we used to make a very careful assessment of whether patients could tolerate being blind for a long period after the operation. It was more a mental than a visual assessment. Those days seem to have gone.

Macular degeneration is a common problem seen in old age and I understand a lot has already been said about that at this conference.

Acute glaucoma is an occasional condition which is rather frightening and in old people it is often misinterpreted. This is one of the dangers, that old people don't really tell you what is wrong with them. They complain of something, but not necessarily the right thing. Of course vomiting is the presenting symptom in acute glaucoma, but you can be easily misled if you are not aware of the dangers of the high tension eye.

The condition which is perhaps of most interest and is of most importance to physicians is the question of cranial arteritis, the curious condition of the temporal arteries which can spread to the retinal artery and produce blindness rapidly. We know that this is an acute emergency which can be brought under control by the use of steroids.

The external muscles of the eye are involved quite frequently in cerebral arterial disease, particularly in thrombosis in the brain stem, and herpes affecting the eye is again not unusual even in old people. The sooner we can develop a vaccine for herpes the better, because it seems to be one of those diseases which is caused by reduced resistance in old age.

Patients with rheumatoid arthritis often have very dry eyes, or Sjögren's syndrome. I think most old people who have advanced arthritis have this condition and we understand at last how best to treat it.

There are two conditions where there have been advances in thinking. The first one is hemianopia. Many stroke patients have a hemianopia and don't realize they have it. They are immense accident risks if they are rehabilitated to walking and are not aware of their condition. It is part of my teaching of all medical students that in every case of a stroke or even expected stroke, that some confrontation test must be carried out to see if the patient has loss of vision to one side. I hope that perhaps the next generation of doctors will be aware of the importance of this condition.

The other condition where there have been major advances is in the transient loss of vision in one eye caused by an incipient stroke - the patient who will develop a stroke who has a transient ischaemic attack. It is quite clear that if you have a transient ischaemic attack with loss of vision for a few hours, followed by recovery, that this demands further investigation. The fact that the eye has recovered and the patient has recovered is irrelevant to the future, because patients who have these sort of attacks are virtually certain to have a stroke in the next year or two. The investigation of the arteries in the neck and inside the scalp is now so advanced and so safe that it can be done, and if there is an occlusion or a partial occlusion in the artery, this can be corrected surgically, so that strokes may be prevented.

Assessment of needs is a critical issue which should be mentioned. It is a standard rule that if you put a bed anywhere, somebody will come and lie in it, but you want to be sure before you put up the bed that you really need it. I would like to make a plea for a conscious



separation of the effects of frailty due to ageing and the effects of illness in ageing. Are we dealing with frail, old people who need support, perhaps a little physical help, or are we dealing with sicker people who need nursing home care with nurses, doctors and medicines? I think the policy of mixing the two and just regarding everybody as old is not really right or proper.

I believe that geriatric skills have a certain amount to offer in addition to your skills in the care of elderly people. I am involved personally with the School of Audiology, hearing being a sensory deprivation which is common in old age - and if I were asked the question "where do we go from here?" I would suggest that there is indeed a need for a link with other specialties, the need for the addition to your specialty of our modest skills in the care of old people.

*Question:* Sister Lawrence very correctly drew our attention this morning to the special needs of the aged, but age may not be the only limiting factor for low vision care. In New South Wales we sometimes feel that certain groups in the community may in fact be overserved at the expense of other groups. Mobile, articulate people or people who have mobile articulate advocates can generally get a service even if they happen to live in a very remote corner of the State. But what about the inarticulate members of society, the frail aged in institutions, the intellectually handicapped and so on. These people seem to need a true domiciliary service, not just a visiting caravan. Would the panel agree and if so, have they any suggestions as to how these services can be implemented in the current economic climate?

*Dr. Colenbrander:* I would have little difficulty in stating that the services indeed are needed, but I think the main problem is the question of how to implement them in the current economic climate. If we have to assign limited funds to a problem that will always be larger than what we can serve, we are faced with very difficult decisions of where to allocate that money. Do we service those first who can be effectively helped, or do we service those who have the most deficit and whose condition can be a little improved? I think this is a difficult moral and ethical question that cannot be answered from just a visual aids or limited professional point of view.

*Dr. Freid:* In California, there are home visitors - some are case workers and others are people who have somewhat less training - to act as advocates for people eligible for public assistance and to take responsibility for their needs. This service is not limited to low vision, but if low vision becomes a need, then the case worker will see that the patient is referred to the proper place. Our biggest problem is in educating the case workers that low vision services are available. Most of the clients have other needs that supersede the low vision problem, and some of them eventually are placed in nursing or convalescent homes.

*Mr. Steele:* Dr. Colenbrander has touched on the very vexed question of who shall and who shall not receive what level of care, an issue which applies right through our whole health services system. Dr. Freid's point brings forward the point about meshing services together, not necessarily assessing a patient simply for one condition, but getting out into the community, seeing people as a whole and looking at the total spectrum of their problems.

*Prof. Prinsley:* There is now a very positive move away from institutionalization and with it there is a concept of developing community services which by and large has been neglected in Australia. The policy has always emphasized bricks and mortar and a bed has been the answer to a problem. Now we are beginning to realize that this is not necessarily so. The development of community care services is cheaper than building institutional beds. We should look at people who are in institutions and ask ourselves not why they need continuing support, but whether there is any reason why we couldn't rehabilitate them, why we couldn't return people to the community.

*Maj. Gen. Cullen:* The question of inarticulate, old and frail people needing help is a difficult one. So many people are not aware that they are disabled and certainly do not know how to go about finding help. I would like to ask a question about that little word in the Handicapped Persons Assistance Act-"deliver". Sometimes you are eligible for government subsidy and sometimes you are not and it is very doubtful whether "delivery" in a home is always as eligible as "delivery" in an approved premises. Could we have some clarification on this issue?

*Mr. Hall:* Bruce Ford directed our attention yesterday to the alleged changing balance of power and the fact that if New Federalism means anything, it means that more and more States are going to determine priorities in the health and welfare services area. I have not heard anyone so far mention the States Grant Home Care Act as a potential source of funding for home-based services. You will know that there is, in my view, an incredible movement now towards independent living for all categories of handicapped people which will become more and more pronounced during the International Year of Disabled Persons. I think, with respect, that it is a great mistake to look to the Handicapped Persons Assistance Act as the sole source for support. I would think that pressure put on State governments, who have to meet half the cost of services funded under the States Grant Home Care Act, could greatly change the whole nature of that programme. At the moment it is very heavily oriented towards aged people and towards the more traditional type of home care services. The Act refers to services "wholly or mainly for aged people" and the "mainly" provides for innovation under that programme if State governments can be convinced. South Australia, for example, is already doing a lot of innovative things under just that programme.

In answer to the question, the whole emphasis of the Handicapped Persons Assistance Act is being reassessed, with the National Advisory Council for the Handicapped working closely with our Department. It is true that at the moment the major emphasis is on what we would call main stream services, which are generally provided through institutions. However, there is no prescription against an eligible organization offering services in the person's own home. The key, on the technical point, is that the organization must be eligible for assistance under that Act. I would say categorically that the great percentage of assistance has been so far offered to institutional services, but let's not over emphasize the pejorative sense of "institutional". Many of those services are in fact home-based to the extent that people come to a sheltered workshop or activity therapy centre or training centre during the day and go back home at night. It is a much smaller percentage of people who go to residential services and some people would want to see that changed, with more emphasis on residential services.



This brings us back to the fact that while this conference has been concentrating on the specific needs of a specific group, governments and government departments must try to achieve a balance between a whole spectrum of equally pressing needs. The priorities that you set within your own assessments are going to be absolutely critical to the way the funds are allocated.

*Question:* We find with old, frail people that they become confused if they are offered a barrage of options too soon. We are experimenting with the initial interview being done in the home. I wonder if any of our panel could help with this confusion that can arise if too much is done too quickly.

*Prof. Prinsley:* I think the issue here is the problem of old people faced with a new situation. We fail to realize that beyond the age of seventy-five or so, taking in new facts and learning new things is rather difficult. An old person admitted to hospital is admitted with all good will by the ward sister, clerk or doctor and is told a whole barrage of facts. He probably only takes in one or two of these facts. He then gets up in the middle of the night to go to the lavatory, forgets where the bell is to ask for help, sets out in the wrong direction, realizes half way down the ward that he is lost, shouts for help and of course nobody comes, is incontinent on the floor and finally the nurse arrives and the patient is put back to bed. The following morning, the ward report states: "Mr. So-and-So is confused, noisy and incontinent".

*Question:* In view of the increasing number of diabetics with visual impairment, does the panel consider we should look at this group of patients with a view to:

- informing them of facilities available prior to need;
- vocational training of young diabetics;
- early liaison with diabetic associations to provide an option for assessment, orientation and mobility;



- positive promotion of life styles and job satisfaction, that is, counselling for those families and coping with visual impairment?

*Mr. Blanch:* Very strictly as a layman and a diabetic of quite a number of years standing, I have a fair knowledge of the experience of being a diabetic. As far as knowing ahead is concerned, with hindsight I think would have liked a little more advanced warning of my visual problem. However, I don't think that the medical profession could have said to me positively: "You are going to have problems with your eyes because you are a diabetic". One ophthalmologist told me quite bluntly that all diabetics must face up to some eye problem if they live long enough. That is pretty vague, but it is a pretty severe warning to those of us who suffer from diabetes that we must be careful as long as possible and strictly control our diet. My doctors frightened me enough to have been a fairly well-behaved diabetic.

Regarding vocational counselling, the second part of the question, I think that this is most relevant for young diabetics who have to find a profession or trade where they can do the least amount of damage.

On the third point, the role of associations for diabetics, I am a subscriber to the Victorian Diabetic Association. Their journals contain articles with information about the latest developments in the field which are valuable to discuss with your specialist. I would recommend anyone with diabetes to go to a top specialist and make use of organizations formed specifically for diabetics.

*Prof. Crock:* I think that diabetes is a challenge. We seem full of predictions that there is likely to be an increase in the population who are diabetic and I was a little surprised that Professor Prinsely did not refer to the rather high incidence of diabetic retinopathy in the elderly. Rather than becoming prophets of doom and filling our patients with horror for the future, I think we should take the very positive approach to this problem because there are great technical advances in the prevention and treatment of ocular complications of diabetes. What we really need is for the medical profession and the optometric profession to bind together so that we can have informed referral by general physicians, geriatric physicians, endocrinologists

and general practitioners to the people who deliver special ophthalmic and preventive services, at a time when their help can be effective. I think the issue is one of public education and the education of the medical profession at large, so that you have early and informed referral.

*Question:* In Asia, where funds are limited and availability of specialized staff creates problems, could the panel indicate the basic staff required for a low vision service - not a clinic - listing them in order of priority? Where certain categories of professional staff are not available, could alternatives be suggested?

*Dr. Colenbrander:* I believe, as I pointed out in my first presentation, that we have to look at the whole spectrum of services that was needed by the patient, rather than start out with the professions. The professions as we have them have been developed in the Western World and are not necessarily applicable in developing countries, where you may not have the choice between an ophthalmologist or an optometrist. Instead you may have to settle for a physician with an interest in ophthalmology, a physician's assistant, a public health nurse, a village house volunteer or whatever is needed in that setting. The person that is needed is a person who is familiar with the local village or community. If there are special problems in that community, that person can be given special training skills in that area and perhaps a supply of hand magnifiers, if that is all that is affordable. The situation of available personnel and aids may be entirely different in big cities or in the upper classes. Again the spectrum in those countries is far wider than it is in the developed countries.

*Maj. Gen. Cullen:* Dr. Colenbrander's point is terribly pertinent. It is important to realize that in some developing countries, governments have a view that is totally opposed to what you might call sophisticated or advanced medicine, where perhaps 90% of their population need the most elementary care. Particularly on the Indian Subcontinent, more than 90% of the population are right on the bread line in terms of food, way below that line in terms of medical care and even further below in terms of eye care. There you have eye camps where a local general practitioner, very marginally

qualified in ophthalmic areas, is seeing one patient a minute, covering the whole range of eye disabilities and using unsophisticated methods of diagnosis. On the other extreme, in the capital cities, there is a small percentage of wealthy people who require the kind of attention we have at Kooyong. These extremes make it difficult to answer the question in a meaningful way.

*Question:* The conference has emphasized the potential of low vision care for maintaining people in employment and promoting upward mobility in jobs. Would the panel agree, therefore, that the Commonwealth Rehabilitation Service could look towards broadening its criteria for assistance to visually impaired people to include these vitally important aspects of rehabilitation? We have found that the Commonwealth Rehabilitation Service is perfectly willing to provide interest free loans, but there is not the same degree of flexibility applied to the need for sophisticated visual aids so that a person can maintain his position in the workforce.

*Mr. Hall:* There is a lot more which could be done, but the same financial constraints apply. There is no question that the application of the broadened charter of the Commonwealth Rehabilitation Service must be developed far more.

*Question:* Does the panel feel that the removal of sales tax from low vision optical aids prescribed by approved practitioners would assist in the provision of low vision care? The Treasurer did very kindly remove sales tax on aids specifically for blind people, but there is a problem with aids, such as hand magnifiers, that are readily available in the community. If these aids are prescribed through a recognized low vision service, would this perhaps answer the anomaly?

*Mr. Hall:* The Australian Council for the Rehabilitation of the Disabled (ACROD) is documenting these kinds of problems in order that we can go back to the Department of the Treasury. The Standing Interdepartmental Committee on Rehabilitation (SIDCOR) was given the responsibility of monitoring the impact of that decision, so that if ACROD has the information, it will be considered.

*Question:* At the Kooyong Clinic, who does the reporting to the patient's ophthalmologist and general practitioner? It seems that you could unwillingly create negative attitudes without sufficient communication between the clinic and medical practitioners.

*Sr. Lawrence:* It is normally the optometrist who reports back to the referring specialist. Together with that I include a letter stating which professional staff were involved in treating the patient. If the patient has been referred by a general practitioner, and this number is increasing because general practitioners are becoming more aware of the clinic, a similar report is sent.

*Dr. Colenbrander:* At our service in San Francisco, the patient is asked to whom he would like the report sent. This includes the ophthalmologist, general practitioner, rehabilitation counsellor or if necessary, the patient can also include himself or friends, so that the patient has access to his own report. I write the report and our low vision coordinator also writes a report which is attached as an addendum, so that the report provides two points of view. I think that reports should not be limited to the ophthalmologist; the patient is one of the first interested in it.

*Comment:* If we could just briefly discuss future directions in New Zealand, Mr. Peter Turner gave a very able account of the Low Vision Services Committee. I believe the main issues facing the Committee are the extension of low vision services to cover large geographical areas of the country and the provision of education and training to rehabilitate people with low vision.

*Comment:* Following on from Mr. Hall's comment, I would like to voice my concern that people who have given papers at this conference have used overhead transparencies which were not always readable for people with normal vision. Also, there was often a stony silence when slides were shown and I feel it would have been better if the speakers had given a quick summary of what was on each slide.

*Question:* The question of driving licences was mentioned this morning and I would like to put an appeal for reporting to the registrar those people who are clearly not fit to drive. The South Australian law was



changed a number of years ago and many medical practitioners and optometrists report patients who are clearly not fit to drive for any reason, not just poor vision. The loss of a licence for drinking, for example, seems to have a good therapeutic effect. Would panel members like to comment?

*Dr. Freid:* In the United States, or at least in California, it is illegal for a physician to report to anyone about a patient without the patient's approval. Optometrists, up to now, have not been included in the law, although they have acted like physicians and have not reported without a signed release from a patient, primarily I think because of the American national pastime - lawsuits! The Motor Vehicle Department in California requires no report from the patient about a change in his vision. However, if a patient has a vision problem and continues to drive, in spite of having a valid California motor vehicle licence, he may have no automobile insurance. If the insurance company can show that he knew he had a vision problem and did something that a reasonable person would not do, he may not be covered and may be financially ruined. Some of us alert our patients to that fact, and although I don't know how much of a deterrent it is, some of them stop driving.

One issue that was raised earlier in the conference was the question of low vision people driving legally. In many States, since about 1968/69, we have had people driving with bioptic telescopes. The records so far have been very good in some areas, while in others they have been not so good. In some States, the record of driving in accidents per number of miles, for low vision people using telescopes, is so much better than the average driver that the Government has no concern.

However, as you might guess there is a great deal of controversy about this and it is fairly tightly controlled. Firstly, one must have a specific need rather than just wanting a licence.

Secondly, you have to have maturity and you have to have at least some minor psychological evaluation. This is done not by psychologists, but by people in the licencing bureau. They will not, for example, give a teenager a driver's licence unless he can demonstrate need and

psychological maturity.

Thirdly, you must have a full field, without restrictions or major scotomas.

Fourthly, you must pass the normal acuity test through the telescope. That means that the lowest acuity would be probably around 6/30 or 6/36. I know of one person who has 6/60, which means that he is legally blind in California, but the telescope he uses, even though it is only a four times magnification, affords much greater assistance than one would expect.

Fifthly, you must have special training using the telescope. There are some commercial schools that have special instructors who teach people how to drive with telescopes, as well as teaching other handicapped drivers.

Finally, you must take a special road test which is considerably more difficult than the road test that is given to the normal driver. In California at the present time we have no records, but we estimate that there are probably one hundred low vision patients driving with telescopes. I have heard of only one serious accident involving a low vision driver and this had nothing whatever to do with his vision.

*Question:* Would Dr. Freid explain how these telescopes are used?

*Dr. Freid:* We are using small bioptic telescopes mounted high in the spectacle frame and tilted up slightly. The patient tilts his head down slightly to look through the telescopes, using them basically for spotting. For driving a car you don't need to have good acuity, but peripheral vision and motion vision are important. The only reason you need good acuity is to determine whether the object down the road is a car, a bicycle, a horse, a dog or whatever else. You also need to know which freeway turn off to take because you can't suddenly turn off the freeway when you are right under the sign. The telescopes are therefore used for spotting.

The low vision driver then uses his regular vision, and if he wants to see something which is detailed, he drops his head and looks

through the telescope. The telescopes must be perfectly aligned and it takes some time to learn to use them, although there are people who use them extremely successfully. There are now expanded field telescopes which give a large field of view, but these have not been used yet in California. These take up much more room than the small bioptics we use.

Dr. Colenbrander pointed out to me that although we are talking about one hundred drivers in California, there may be only two or three hundred low vision drivers throughout the country. In relation to our total population of 220 million this is only a very small proportion.

*Mr. Hall:* I am astounded that Professor McCredie and Major General Cullen have not been given any directions as to where you want the Australian National Council of and for the Blind (ANCB) to be going on your behalf. Rather than detailed questions that I would say indicate some tunnel vision, I had hoped that you would be wanting to look at broad issues - the allocation of resources, the ways in which information is better shared, how to develop a sufficient data base, who is responsible for what aspects of services, how services link together. Mr. Hill and Dr. Sax threw out some challenges, but these unfortunately have not been picked up.

*Maj. Gen. Cullen:* Whilst from the floor people haven't given a summarized version of just what they want, members of the Executive of the ANCB have collected an enormous amount of information from this conference. We have an Executive meeting tomorrow where we will concentrate on putting together the jigsaw of requirements, attitudes and views into a recommendation for where we will go from here. I don't want to pre-empt what that meeting will do, but our President, Professor McCredie will be presented with the suggestion that material from the conference might well be reduced down to some concrete proposals for discussion at our annual conference later in the year. That may be a slow process, but there has been so much new material brought up here that I think it is going to take a little time to digest. But I promise you Mr. Hall, that in due course you will receive a well-researched list of suggestions on which we can work together.

*Mr. Steele:* I am certainly not going to attempt to summarize the day's events. However, I would just like to refer to one point which Dr Johnston made this morning. He said that cost benefit doesn't always mean providing a cheaper service, and I think this is something that politicians do at times tend to overlook. Much is said about the cost benefit of services, with the implication always being that the cost of services must be reduced. However, we must look at the benefit side as well and I think we have been largely doing that at this particular conference. As well as costs, we have to look at such things as the rational provision of services on a geographical basis, the quality of services, their accessibility and finally, we have to look at the overall standards of management of services. These days we hear gloomy phrases about declining expenditure and so forth. Let's, those of us who are in the field, be a little positive and realize that in this fairly affluent community, someone really does have to look at the total picture and continue to press for adequate allocation of resources, particularly in the non-acute areas, like our increasing aged population.

We may not have answered all the questions about future directions, but I think that we have had a stimulating panel discussion and a fruitful day.

WORKSHOP I  
LOW VISION AIDS





A GUIDE TO THE CLINICAL ASSESSMENT OF THE OPTICAL AND  
ERGONOMICAL PROPERTIES OF OPTICAL LOW VISION AIDS

George Smith

A wide variety of devices are available to aid the vision of those who are partially sighted. These range from simple lenses to sophisticated camera/television systems. However, because of cost and versatility, the simpler optical aids, usually magnifiers, are currently the most common and frequently prescribed.

The low vision practitioner has a bewilderingly wide range of optical aids to choose from and many of those come with little or no data on their optical property. Sometimes the information is incorrect and misleading. There are thus strong arguments for the clinicians and those working in rehabilitation being able to measure and check the most important properties quickly and simply without complicated optical equipment. Further, they should be aware of which optical properties limit the versatility of optical aids and affect visual performance.

Armed with this knowledge, the practitioner is more able to match an aid with the patient's visual characteristics, for example, accommodation range and required magnification to suit the intended task.

Optical aids can be divided into three main groups depending upon their optical properties and intended use as follows:

*Simple magnifiers:* These are usually single lenses or may be two or more lenses placed close together. They are intended to give a magnification effect for close objects. The magnification range of these magnifiers has an upper limit of about ten times and magnification and working distance are not independent. Therefore, they cannot be used for the magnification of distant objects.

*Telescopes - distance:* These are designed to view distant objects with a specified magnification. There is usually no limit to the upper limit of magnification. However, they are usually hand held and the greater the magnification, the greater are the problems of image motion due to hand or body movement. There are also problems when these telescopes are used to view close objects. This latter point will be discussed in greater depth.

*Telescopes - near point:* These are intended to view objects at typical reading distances say from twenty-five centimetres to several metres. Unlike simple magnifiers, magnification and working distance are independent qualities. At high magnifications, they also have problems of image motion due to body and hand motion and when viewing objects at distances other than the designed working distances. Near point telescopes may be specifically designed as such or can be modified distance telescopes. The modification is usually achieved by adding a positive lens (a reading cap) onto the front of the telescope or at the eye end.

### Simple Magnifiers

Simple magnifiers are single lenses or combinations of single lenses which, for most purposes, can be regarded as a single, though thick, lens with an equivalent power here denoted by the symbol  $K$ , or equivalent focal length here denoted by the symbol  $f$ . Those two qualities are related by the simple equations:

$$K = \frac{1}{f} \text{ or } f = \frac{1}{K}$$

The units of  $f$  are metres and those of  $K$  are reciprocal metres or dioptries. The symbol for dioptries is the capital letter  $D$ .

Many optical texts derive the following formula for the effective magnification  $M$  of a simple magnifier:

$$M = \frac{K \text{ (in dioptres)}}{4}$$

Thus a (K=)20D lens would have a magnification of five. However, in the derivation of this formula there are two assumptions which in many cases are not valid. These assumptions are as follows:

- the user has a near point of 25cm. Many low vision patients may have near points very different to this and many low vision practitioners find values of 40cm to 1 metre more realistic;
- the object is assumed to be placed at the front focal point and thus the image is at infinity. Again this does not suit many low vision patients whose far point may be well within this distance.

Those assumptions often lead to the above formula giving significantly incorrect estimates of effective magnification in many cases. Also, many suppliers of simple magnifiers only specify the magnifier by a magnification value or factor without stating how this is defined.

The general case, assuming the simple magnifier can be approximated by a thin lens, is shown in Figure 1, (p. 352). The equations governing the visual ergonomical properties of the magnifier are as follows:

$$L^1 - L = K \quad \dots (1)$$

$$L^1 = K^2 L \quad \dots (2)$$

$$M = \frac{g(K) - L^1}{(1 - dL^1)} \quad \dots (3)$$

$$h = \frac{W}{dM} \quad \dots (4)$$

where  $L^1 = 1/e$  = image vergence

$L = 1/e$  = object vergence

$g$  = users near point distance

$h$  = diameter of field of view

$W$  = (aperture) diameter of the simple magnifier and the



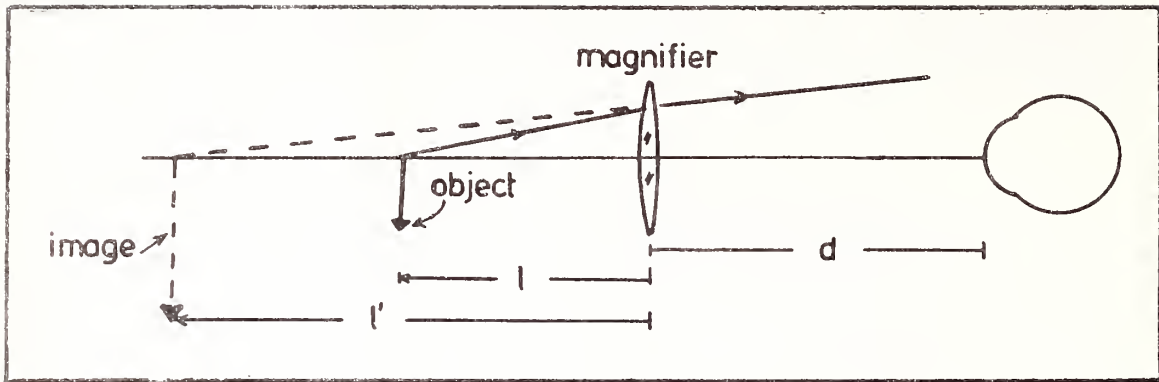


Figure 1.

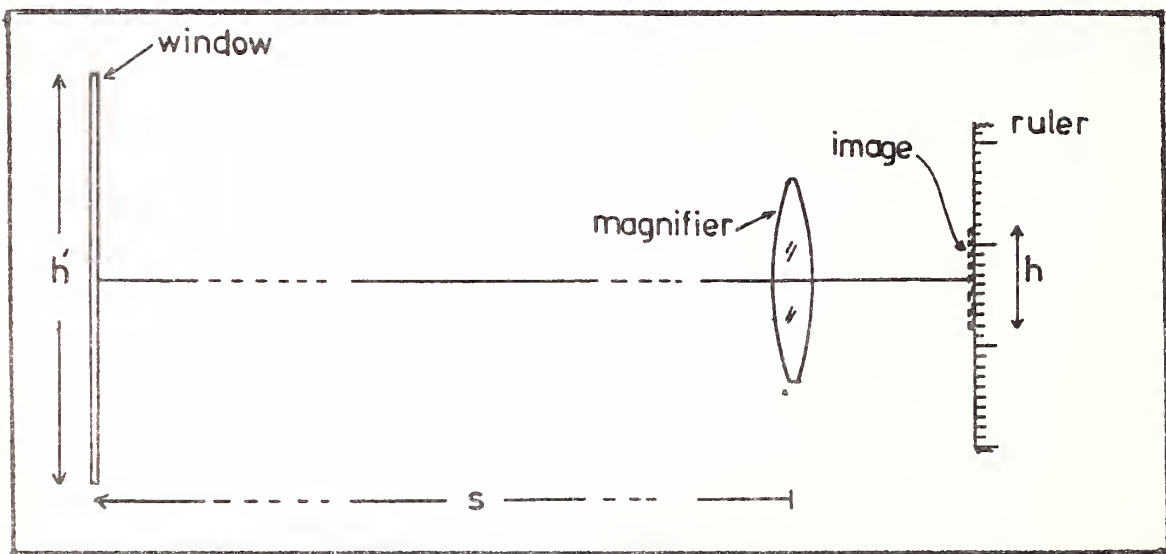


Figure 2.

other quantities are defined in Figure 1 or explained below. The units of distance should be metres.

Ergonomical considerations of these equations are as follows:

Equation 1: Users must place the lens or object so that the image position given by its vergence  $L^1$  is within their range of accommodation. Object position is fixed for stand magnifiers and hence so is image vergence. In this case, only the eye position or accommodation can be changed to focus the image.

Equation 2: This equation gives an estimate of how the image moves as the object and lens move relative to each other. It can be seen that the image vergence variation  $L^1$  is proportional to the square of the lens power for the same small movement  $L$  in the object position. This equation is used to assess how steady a magnifier must be held to maintain a focus. Since many low vision patients have reduced accommodation, if any, they must hold higher power magnifiers very steady. For this reason high power magnifiers are usually stand magnifiers.

Equation 3: This equation shows that the effective magnification depends upon image vergence, near point distance  $g$  and eye position  $d$ , besides the equivalent power  $K$ . It is a most suitable form for stand magnifier calculations.

Equation 4: Field of view usually decreases with increases in magnification and eye distance and this equation shows the exact relationship. Given a fixed magnification and eye distance, field of view can only be increased by increasing the diameter of the magnifier. The aspheric magnifiers usually have a larger diameter than others of the same power, thus having a better field of view.

Important quantities to measure include: The equivalent power  $K$  and (aperture) diameter of the magnification are the only constants of the lens. The diameter is easily and quickly increased with a ruler, but the power which is a most important quantity is not so readily measured and is often not given by the manufacturer. Instead, a magnification factor is often given say  $\times 20$ . This may give a very

misleading estimate of effective magnification in many cases and it is suggested that equivalent power be measured and checked even if it is given.

With stand magnifiers, image vergence is also an important parameter and has some influence on the effective magnification and field of view.

Below will be described simple techniques for measuring equivalent power of any simple magnifier and image vergence of stand magnifiers, techniques that can be easily applied in clinical situations.

*Equivalent power:* To measure this quantity, all that is required is a bright object of known size ( $h^1$ ) and distance ( $s$ ), say a fluorescent light tube or a bright window on the far side of the room and a transparent ruler with a strip of Scotch Magic tape over the scale.

The bright object is imaged on the ruler and magic tape as shown in Figure 2, (p.351) and the size of the image  $h^1$  measured. The equivalent power is then given to a good approximation by the equation:

$$K = \frac{h}{h^1 s} \text{ dioptres}$$

with a measurement in meters. The greater the value of  $s$  the better.

*Image vergence of stand magnifiers:* This can be measured very simply by viewing the image with the eye close to the magnifier through a series of lenses (as shown in Figure 3, p. 355) beginning with the highest positive power and stepping down until the image is just clear. The image vergence ( $L^1$ ) is then the power in dioptres of the highest power that just gives a clear image. Ametropes should use their spectacles for this measurement.

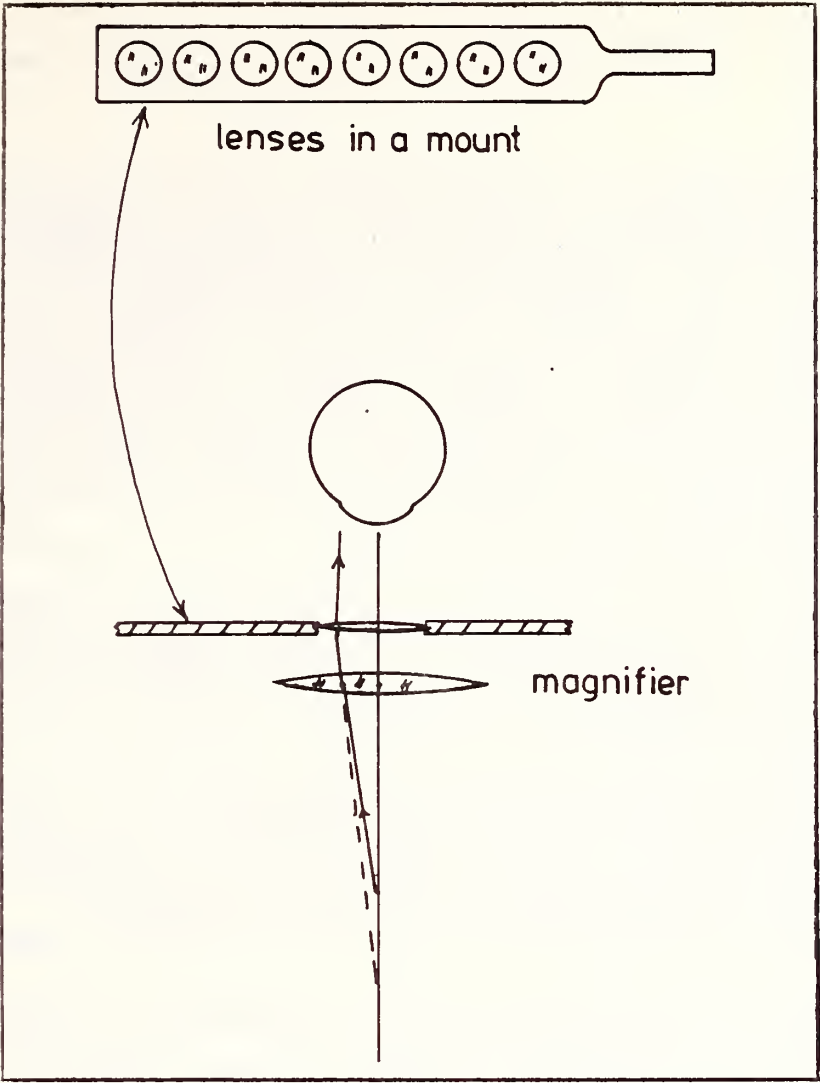


Figure 3.

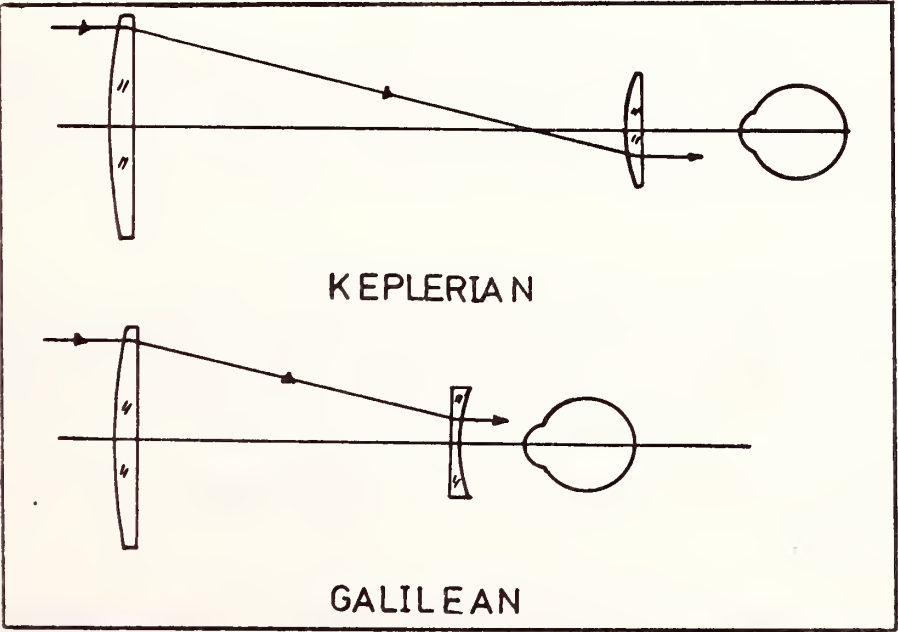


Figure 4.



## Telescopes - Distance

These are usually either of the Keplerian or Galilean type and the fundamental differences in construction are shown schematically in Figure 4, (p. 355). The Keplerian telescope consists of two positive power lenses and the Galilean telescope has a positive and a negative power lenses, as shown in Figure 4. Because of the constructional proportion, the Galilean can be made much shorter than the equivalent Keplerian telescope. The differences in general optical properties are given in Table 1, (p. 360).

The Keplerian type has an inverted image unless an erecting lens or prism is built into it. If this is done the telescope is usually longer and/or heavier.

The main disadvantage of the Galilean telescope is its small field of view and magnification range. However, its short length and size makes it suitable for mounting on a spectacle frame.

The magnification and field of view of telescopes is usually specified and can easily be checked by a number of simple techniques. Unlike simple magnifiers, distance telescopes have no power and magnification replaces power as the main describing optical parameter.

One other important optical property that is specified and is of great ergonomical importance is the working distance range of the telescope. However, since this is also relevant to near point telescopes, it will be left until later.

The measurement of magnification can best be done by looking at a distant regular pattern such as a brick wall and viewing with both eyes open. The eye looking through the telescope will see the bricks magnified. By comparison of the number of small bricks to one magnified brick, the magnification can be estimated reasonably accurately.

Field of view can be estimated at the same time, if the actual size of the bricks and the distance to the wall is known.

## Telescopes - Near Point

These telescopes are not as easy to assess as the distance telescope, as their optical properties are more complicated. Firstly, the simple magnification definition used for distance telescopes does not apply. The definition of magnification of near point telescopes is often the same as that of simple magnifiers, that is, the relative size of the image infinitely seen through the device to that of the object seen at 25cm (an assumed near point or working distance). This definition may give very misleading estimates of effective magnification if the telescope is to be used at other working distances, for example, 40cm, 1.0m or even for watching television. It is thus very important to measure the magnification for the intended working distance rather than rely upon the manufacturer's quoted value. The magnification can be measured by the binocular comparison technique described for distance telescopes with the object (for example, brick wall or something smaller) placed at the desired working distance.

## Focusing Range of Telescopes

Both distance and near point telescopes are designed to have a certain working distance. Often the user will need to use the telescope at some other distance and may, depending upon the task, change viewing distance frequently.

As soon as the object distance changes the image distance also changes. For distance telescopes the image vergence  $L^1$  depends upon the object vergence  $L$  by the relationship (Freid, 1977), where  $d$  is the

$$L^1 = \frac{M^2 L}{1 - dML} \quad \dots (5)$$

distance between the two lenses (approximately the length of the telescope). Usually the quantity  $dML$  is much less than unit and thus

$$L^1 \text{ \& } M^2 L \quad \dots (6)$$

Corresponding formulae for near point telescopes have been given by Smith (1979). Thus if a 3x distance telescope is to be used to view an object 2m away ( $L = -0.5D$ ) the image vergence would be

$$L^1 = -4.5D$$

Thus the user would be required to accommodate by 4.5D. If this is not possible or is excessive, the user may be able to change the instrument focus to reduce accommodation demand. Equations 5 and 6 show that the higher the magnification of the telescopes, the more difficult it is to maintain a clear focused image if there is any change in object or working distance. This is of particular importance to the older low vision person who will have poor accommodation and may not have a steady hand to hold the telescope.

Finally, it can be seen that the working distance range should be considered as an important criterion in assessing telescopes. The range can be increased by increasing the instrumental focusing range. However, there is no simple way of expressing this range that can be applied meaningfully to a wide range of working distances and user accommodation ranges. The complete specification would include say graphs of the image vergence versus different object distance for a number of focus range settings. A simple rough guide could be obtained by finding the closest and furthest object distance with the image vergence set at an intermediate level of say -1.0D. This measurement could be easily done using the lens sequence described previously to measure the vergence of simple magnifiers.

## Conclusions

The intention of this presentation was to explain the important optical properties of optical low vision aids, explain how they may affect visual performance and explain any other ergonomically related factors. They are simple techniques that can be carried out simply

and quickly without any special expensive apparatus.

Image quality factors were not covered, as measurement of image quality is not as easily carried out and at present it is not known how image quality affects visual performance. It is intended to make this the subject of a future research project.

#### References

Freid, A.N., "Telescopes, Light Vergence and Accommodation", Am.J. Optom & Physiol Optics, Vol. 54, No. 6, 1977.

Smith, G., "Variation of Image Vergence with Change in Object Distance for Telescopes; The General Case". Am.J. Optom & Physiol Optics, Vol. 56, No. 11, 1979.



	Keplerian	Galilean
magnification range	unrestricted	usually less than 3
image orientation	inverted	erect
field of view	larger than equivalent Galilean	small
system length	longer than equivalent Galilean	short

Table 1.

## FILTER LENSES FOR RETINITIS PIGMENTOSA PATIENTS

Josef Lederer and Graham Dick

Retinitis pigmentosa sufferers, in spite of their greatly reduced light sensitivity and severe nightblindness, experience intense and often intolerable glare in bright, sunlit surroundings. On entering the shade or less bright (indoor) surroundings, their dark adaptation is greatly impaired and a "blind" period of up to thirty minutes occurs. These adaptation problems, together with the severe loss of peripheral vision, constitute their main visual handicaps, since central vision, in most cases, remains relatively good and useful. Most patients soon acquire a pair of "dark glasses" of some kind.

Empirical research, using various types of ophthalmic filters and carried out at the Low Vision Clinic of the Royal Blind Society of New South Wales, has shown that red and infra-red absorbing filters provide a great deal of symptomatic relief for most of these patients, in so far as they:

- greatly reduce, and often eliminate, the disabling glare in bright, sunlit surroundings;
- improve vision to varying degrees, especially outdoors;
- virtually eliminate the "blind" adaptation period on entering less bright surroundings.

Because of their red absorbing property, these filters are intensely blue in colour, red objects viewed through them appear black and red lights, including traffic lights, are not seen. This must be explained and impressed upon prospective wearers who need to accept this, as well as the resulting distortion of colour vision generally. For the same reason, when removing the filters on entering buildings, a yellow or orange after-image of a few minutes duration will be experienced. This

is an expected and physiological after-effect and is in no way detrimental.

The filter glass used at present is the "LPI" filter glass manufactured by the Chance Pilkington Company in England. Its transmission curve for a 2mm thickness is shown below.

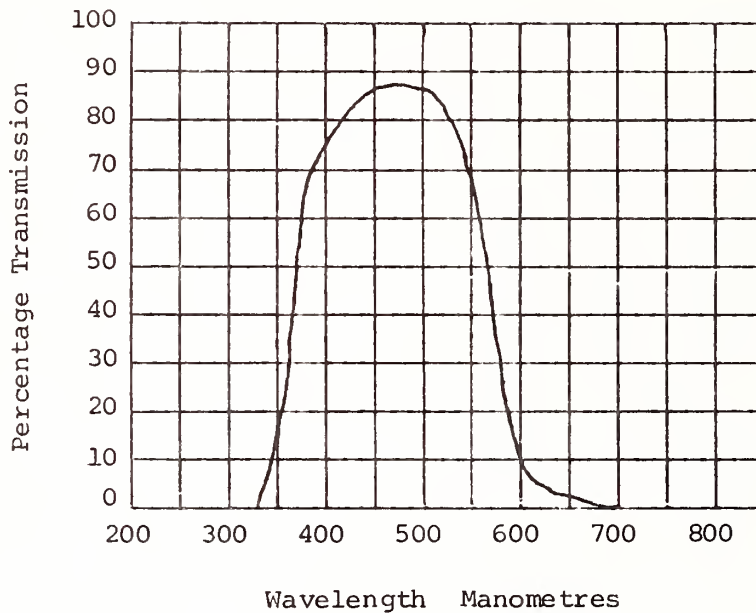


Figure 1.

In Australia, at present, the firm Optical Prescriptions Spectacle Makers imports LPI filter glass from England in ophthalmic blanks and grinds and polishes these blanks to prescription lenses. These are prescribed and dispensed either as distance prescription spectacles or as Plano Clip-ons. Bifocals are not available. Because of the relatively high cost of the imported glass blanks, the current price of a pair of LPI lenses, in Australia, is approximately \$A135, to which must be added the price of the spectacle frame.

Of approximately fifty patients fitted with LPI spectacles so far, the great majority wear them very successfully and obtain the symptomatic relief and visual comfort detailed above. Most of those patients wear the LPI spectacles outdoors only, but a significant number prefer to

wear them constantly. The spectacles have been particularly successful with very advanced cases of retinitis pigmentosa.

A small minority of patients has rejected the spectacles because of the colour distortions induced by them. In one case, the yellow after-image and the "disappearance" of red persisted for many hours.



## CLOSED-CIRCUIT TELEVISION

Peter Cunningham

The importance of magnification to the low vision patient is well known and a vast number of optical aids have been designed and produced to provide various levels of magnification for both distance and near tasks. Simple magnifiers, whether stand mounted, spectacle mounted or hand held and telescopic aids are all simple lens systems which operate on the principle of increasing the angular subtense of the retinal image over that obtained when an object is viewed unaided. Of the currently available aids, the closed-circuit television system (CCTV) or video-magnifier, a more complex optical and electronic system, undoubtedly produces an ideal range of magnifications with the best image quality.

Various CCTVs are now available, some with magnification ranges of x3-x60. A focusing zoom lens on a video-camera enables the patient to select the most suitable magnification for the visual task at hand, whereas conventional magnifiers have relatively fixed magnification and often two or three of them may be required by patients who wish to undertake different visual tasks.

## Advantages and Disadvantages of CCTV Systems

As conventional simple magnifiers increase in effective power and thus magnification, it is axiomatic that field of view reduces and optical aberrations increase. Often the focal distance, and consequently the viewing distance, is also reduced. These factors result in slower, more cumbersome reading and restrict or eliminate writing and most other manipulations under the aids. On the other hand, the CCTV has a relatively large field of view which will alter depending on television monitor screen size and viewing distance from the patient.

Aberrations and distortions are insignificant and most CCTVs have a camera-to-page distance of 20-25cms, allowing writing or typing under the camera.

The CCTV has some further advantages including reversal of polarity or contrast; that is, black on white or white on black viewing which can be extremely important to those low vision patients troubled by glare, or those preferring as much light as possible. On some units there is electronic contrast enhancement to sharpen the image and improve contrast above that obtained with the normal television system. Despite all these advantages, there are some major disadvantages and as a result, very few CCTVs are prescribed for low vision patients.

The first of these is the cost. Available units vary in cost from about \$1,000 up to \$3,000. Unfortunately, the more versatile and higher quality units are generally the more expensive. Obviously such a price is beyond the reach of many patients, particularly considering that most low vision patients are elderly and many have limited means. If the patient's ocular condition is progressive, the purchase of a CCTV requires an expensive outlay for an aid that may be useful for only a short period. Breakdowns and electronic servicing might also be an expensive drawback.

The size of the unit is another restricting element. Some of the smaller CCTVs are portable, but the larger, more versatile units should not be shifted once they are set up and fine-tuned. Regardless of portability, a video-magnifier is not the aid that one can use whilst shopping, out in the garden, on the train, etc.

Neither is the CCTV system an easy aid to use. Because of its complex electronic nature, the user is required to make adjustments to the contrast, focus, brightness and camera position. However, these are usually mastered quite well with training and practice and in time, both reading speed and reading duration improve.

Currently available CCTVs employ black and white cameras and monitors, so do not provide any colour cues which may be important to low vision patients in their conduct of some visual tasks. The additional cost to convert a CCTV to produce colour images is not warranted, since most

tasks can be performed in black and white.

The decision as to whether or not a patient should be prescribed a CCTV is basically a cost/benefit one. Does the CCTV enable the patient to perform a particular range of visual tasks and perform tasks that could be achieved previously? Does the cost justify the improvement in visual performance that may be obtained?

Young patients with static congenital ocular disorders are very good candidates for CCTVs. They must be given every opportunity to compete, both on an educational and vocational basis, with their normally sighted counterparts. CCTV has many occupational uses and can be extremely beneficial to the business man or woman.

As mentioned, those patients with progressive disorders are not good candidates and, unfortunately, those of limited financial means are in a similar position. Nevertheless, every patient must be assessed regarding his or her visual needs and that important cost/benefit factor must be considered.

## CLOSED-CIRCUIT TELEVISION

Peter J. Turner

Essential to the effective use of closed-circuit television (CCTV), for education and occupational use where longer periods of operation are common, is attention to ergonomic factors of the environment. Visual fatigue (asthenopia), consequent or in addition to general fatigue, can be minimized by careful attention to posture, lighting, ventilation and work place design. Job analysis is imperative for correct prescription of the aid.

## Anthropometric Factors (Posture)

Seats should be adjusted for height so that the forearm, when in the X-Y writing platform, is not elevated into an unnatural position. To provide clearance for the upper legs in this elevated position, however, the table must be as thin as possible - no front drawer can be tolerated.

If elevation of the seat for the optimum position for the forearm has caused pressure on the posterior aspect of the thigh, a footrest should be provided to support the whole foot at the correct height.

The chair should be a typist's design without armrests and with castors, so that it can be pulled in close to the table. There should be adequate lower lumbar support when in both the reading and writing position.

The position of the screen should be normal to the line of gaze depressed about 10 to 20 degrees from the horizontal, when the chair is correctly adjusted. To read looking straight ahead or above centre is an unnatural position and induces unnecessary fatigue.



The screen should be rotated about a vertical axis or translated sideways into the area of useful vision, so that if eccentrically fixating, the head does not have to be rotated into an unnatural position.

### Lighting

Most operators will prefer subdued lighting. This enhances contrast on the screen and minimizes glare factors.

Care should be taken to ensure that no distance lights or windows are reflected in the screen or in direct view, and that diurnal variations of sun position cannot cause a problem.

The position of the illuminator on the X-Y platform should be adjusted to minimize shadows from the tip of the pen in the writing position.

### Ventilation

As the equipment gives out heat, adequate ventilation should be provided.

### Workplace Design

Are there adequate work surfaces for large documents or complete work?

Are work surfaces, all items of equipment, job aids which must be manually operated, within normal arm reach of the operator, requiring only minor movement of the trunk?

## Job Analysis

Frequently it will be found that within a commercial environment, clerical and accounting procedures have developed over a period of time, resulting in duplication of effort, or other inefficiencies. The visual component of such tasks should be carefully analysed and when possible, advice should be given on modifications to procedures to simplify the visual component. Examples include:

- the use of handwritten numbers to describe components rather than descriptors, since handwriting tends to be less legible than numbers;
- ink pen coded columns in a wage book so that the fine print does not have to be read to determine the column;
- the use of a talking calculator instead of a conventional adding machine.

Where a considerable amount of information transfer is involved, for example, transferring data from costing sheets to invoices, a second camera and viewing stand could be considered. The two cameras coupled through a video controller will provide a split screen facility to overlay, or place the view from one camera above or adjacent to the other.

## Recent Developments

Because of the increasing use of electronic data based systems in the work place and schools, Televaid Systems have been developing a word processor/computer to produce 5cm high fully formed characters on the screen. These appear from the right hand side in a single row and progress across the screen as they are typed in from the keyboard.

Cues are provided to demonstrate to the operator where on the page the "window" of print appears and full word processing facilities for editing and formatting are provided. Printout can be on a dot matrix or full faced type printer, or the data can be stored on discs or cassette tapes for future recall. Provision is made also for full programming capacity, interface with main frame computers or telephone modems for remote communication. Readily available programmes for other popular home computers can be utilized. This equipment will be available in three basic forms:

- as a video typewriter for teaching touch typing;
- as a word processor;
- as a full word processor/minicomputer.

Provision is also being made for speech synthesized output as a "talking terminal", "talking typewriter", etc.

For physically handicapped individuals unable to use the keyboard there is a morse code interface. Three switches operated by minor muscle movement of any part of the body will initiate the functions of the computer described above or, in addition, provide environmental control, for example, telephone calling, sun curtain control, door locks, alarms, etc.

WORKSHOP II  
COMMUNITY AWARENESS OF LOW VISION





## SIMULATION OF LOW VISION

Julius Liubinas

Low vision, partial sight or subnormal vision are terms commonly used to describe the level of performance of patients, who despite the best optical correction available using standard ophthalmic lenses, are unable to perform certain visual tasks. The number of disorders responsible is great, as is the variability shown between patients and patient groups. Therefore any attempt to simulate the gamut of visual losses is doomed from its conception. However, it is possible to categorize the visual losses of low vision patients into functional visual losses which can then be demonstrated.

Before examining these, the mechanics of normal vision should be considered. For the purposes of this discussion, the eye may be approximated to a closed-circuit television system. Obviously there are two processes required to obtain a satisfactory picture. The first involves the correct imagery of the world onto the receptive film. In the eye, the cornea, aqueous humour, crystalline lens and vitreous humour are responsible. The second requires the detection and transformation of this image into a picture on the television screen. The retina is the receptive film of the eye and the beginning of a series of complex interactions which culminate in the projection of an image into space by the cortex.

Deficiencies within either of the above processes may result in a visual loss. Specific forms of dysfunction (and hence visual loss) can be identified within both these processes. Their classification, effect and appropriate modes of simulation are presented in Table 1, (p. 377). Justification for this classification and the simulation techniques can be found in Liubinas (1979, 1980).

## Optical Losses

The first step in acquiring a clear image on the television screen is the accurate imagery of the visual world onto the receptive film. Ideally even the finest detail should be resolvable within the image. A poorly focused system prevents this goal being achieved. Thus defocus lowers the resolution limit of the system and, understandably, the greater the defocus the poorer resolution. In clinical terms, visual acuity is reduced but gross objects are still readily visible. In practical terms, reading (and other alphanumeric tasks), or any task requiring a clear image (threading a needle), are difficult to perform. However, as mobility and other daily functions involve gross objects, these are relatively unaffected.

Defocus of +4.00 DS (or greater) above the distance prescription, preferably induced with contact lenses, will demonstrate this form of visual loss. Care should be taken to consider only remote visual tasks as a positive lens, by its nature, will enhance the visibility of objects held close.

Patients with early keratoconus, corneal distortions, ectopic pupils and similar conditions in which the refractive surfaces are irregular, display visual losses that can be attributed to defocus. The cornea is often involved as only a minor variation in its curvature markedly alters its refractive status.

Just as defocus will lower the resolution limit of a camera, a cloudy lens will reduce the transmitted contrast of all objects within the image. Contrast may be defined as relative brightness and is a measure of visibility.

A white spot on a black background is readily seen (high contrast); a white spot on a grey background less so (medium - low contrast); a white spot on a white background is not (no contrast).

Thus the picture taken with a cloudy lens appears faded. Colours are not as bright and objects of low initial contrast become invisible. As the execution of a lot of non-alphanumeric tasks requires adequate contrast (size is seldom the limiting factor), it is not surprising

that this form of loss is debilitating.

This reduction in contrast, which is the result of disability glare, produces greatest hardship under low or non-uniform lighting conditions. Indeed, in some patients, the media are so clouded that even the moderate variations in light level found within the normal environment may cause difficulties. Thus dimly lit passages and shadows engulf objects, whilst poorly designed light fittings (exposed bulbs or spot lights) or even sunlight through a window cast the low vision patient into a fog. Patients with corneal edema, corneal scarring, cataract and similar conditions where the media opacify, are likely to exhibit visual losses associated with lost contrast sensitivity.

The white plastic diffuser used to simulate this form of loss was chosen as it does not affect visual acuity and it markedly lowers contrast sensitivity. More technical information may be found in Liubinas (1979).

The two forms of visual loss (defocus and disability glare) seldom occur in isolation. Thus the two simulation techniques should be combined to provide a better appreciation of the visual problems encountered by patients with defective refractive systems.

#### Neural Losses

Whereas the optical losses could be readily explained in terms of the lens systems of the television camera and the eye, neural losses are far more involved, as any of the structures within the neural pathways can be affected. Despite the variable aetiology, the common mode of expression is that of a visual field defect. Visual field defects are often complex and dependent on the testing conditions. To retain simplicity, this group has been subdivided into central and peripheral visual field loss subgroups.

### Central Visual Field Loss

Central visual field losses comprise a large portion of the low vision patient population. The primary deficiency amongst this patient subgroup is a reduced visual acuity as a direct result of the central scotomata. Again the performance of alphanumeric tasks is preferentially affected. The scotomata may also lower visual performance by obscuring surrounding visual detail, thus prohibiting preview or adequate localization of the limited data available. This latter factor explains why patients with visual acuities of 6/15 are sometimes unable to read even with magnification assistance. Other complication factors include meta-morphopsia, poor tolerance of variations in light levels, dependence on high light levels, lowered contrast sensitivity and finally, poor mobility despite intact peripheral visual fields.

Unfortunately there is no satisfactory technique for simulating central visual field losses. However, some measure of the problems encountered by this patient subgroup can be obtained by fixating a camera flash unit during discharge. The resultant intense after-image will temporarily obscure all detail. Visual acuity will be reduced and eccentric viewing will need to be employed. The complex nature of central visual field losses will not be reproduced by this technique. Note that repetitive stimulation should be avoided.

Typical conditions within this group include senile and juvenile macular degenerations, hereditary macular dystrophies, macular cysts and holes, hypertensive or diabetic retinopathies and degenerative myopia.

### Peripheral Visual Field Loss

Peripheral visual field losses are not as common within the low vision patient population. The form of the loss may vary from sector or segment losses (artery or vein branch occlusions) to hemianopias



(cerebrovascular accidents) to tunnel vision (retinitis pigmentosa and glaucoma). The disabilities encountered stem from a lost capacity to detect gross objects within the peripheral visual field. Thus orientation and the detection of potential environmental hazards are disturbed, resulting in decreased mobility. In contrast to patients with a central visual field loss, these patients can function relatively normally until their visual fields are extremely restricted. Other complicating factors do develop and may include poor dark adaptation, dependence on high light levels, glare sensitivity, lowered contrast sensitivity and even lowered visual acuity.

Tunnel vision may be simulated to a reasonable degree of accuracy using spectacle or goggle mounted occluders with a central pinhole. Care should be taken when making these devices to ensure that the entire peripheral visual field is obscured. Monocular devices (second eye occluded) are preferred.

#### References

- Liubinas, J., "A Functional Analysis of Methods of Simulating Low Vision", Unpublished M.Sc. (Optom) thesis, University of Melbourne, 1979.
- Liubinas, J., "Understanding the Low Vision Patient", submitted for publication in the Australian Journal of Optometry, May, 1980.

Category of visual loss	Optical		Neural	
	Defocus	Disability glare	Central visual field loss	Peripheral visual field loss
Representative disorders	Keratoconus, ectopic pupils, corneal scarring, irregular astigmatism, cataract	Corneal scarring, corneal edema, cataract, albinism	Amblyopia, senile or juvenile macular degeneration and dystrophies, hypertensive and diabetic retinopathies, macular cysts and holes	Glaucoma, retinitis pigmentosa, retinal artery / vein occlusion, retinal detachment, neurological disease
Assistance regimes	Magnification Therapeutic contact lenses Lighting control	Lighting control Contrast enhancement	Lighting control, magnification, contrast enhancement	Referral for other services Lighting control Minification
S I M U L A T I O N	Technique	+4.00 DS defocus over the distance prescription	Excessive light adaptation induced by fixating a bright light (camera flash unit during discharge)	Full field occluder with central unobstructed area ("tunnel vision")
	Limitation	To be used solely for viewing remote objects	Short term field loss (10-15 sec.; repeated stimulation to be avoided)	Not ocular mounted; binocularility attainable only at specific viewing distances
	Comment	Defocus primarily degrades the integrity of edges or fine detail; the ability to detect most objects is unaffected; size visibility	Central visual field losses are more complex than the simulation suggests; the scotomata reduce either detection/ resolution performance or the capacity to localize and integrate the perceived data or both	Peripheral visual field losses prevent preview of peripheral objects; approaching hazards may be undetected and orientation may pose a difficulty; mobility is thus decreased

Table 1. Summary of the functional visual losses and appropriate simulation techniques.

## LOW VISION AND PUBLIC EDUCATION

Walter Bolin

### The Task

We aim to develop general awareness in the community that significant numbers of the population are affected by severe visual difficulties which may pose social, vocational or personal psychological problems. Further, and arising from increased consciousness, we aim to encourage attitude changing interaction at all levels of community life between those with adequate vision and those with low vision. Essentially, if visually impaired people are given adequate skill training, there is also the need to develop a climate in which those skills may be exercised.

### Developing Strategies

The following strategies are used:

Appoint a person (or persons) with this specific responsibility: Most of the current public relations activities by agencies relate to "blind" persons and have a fundraising bias rather than an educative thrust, although there may be some spin-off. The appointee should be someone conversant with all aspects of low vision, able to communicate at both layperson and professional levels. The job specification should be separated from fundraising activities.

Improve education value of present media materials/publications: This could be done by information type material geared to low vision, for example, "Granny wears thick glasses ..."

Define "target" groups: Perhaps attitudes may be more effectively changed by developing the awareness of key people in a position to train or assist others. Some important areas may be:

- education: conducting seminars and workshops for teachers, student teachers and post-secondary lecturers;
- medical: contacting ophthalmologists, general practitioners and medical students to inform them of low vision and other rehabilitation services available;
- paramedical: involvement in the recognized training programmes for graduates and students in directly associated fields;
- helping and caring professions: presenting information type seminars to highlight needs of low vision and the resources available;
- community aid and similar groups: informal meetings to provide training for volunteer community resource people, in appropriate ways, to offer advice or assistance to those with low vision.

In general, public education strategies need to be systematically developed to contact key community workers. Conversely, it appears that education of the "public" as a totality is so expensive as to be beyond the financial resources available and somewhat suspect in effectiveness.

#### Resource Development

Adequate and appropriate training resources need to be acquired or

developed, then kept current. These include:

- well maintained, self-threading 16mm projector(s) plus access to appropriate films, such as "What Do You Do When You See a Blind Person?"
- printed materials and reprinted special interest articles for distribution. The need to *regularly* up-date these items should be noted;
- video equipment: acquisition of pre-recorded video cassettes is an increasingly valuable resource. Playback equipment is basic and a camera *may* be a useful training tool;
- overhead and 35mm projectors plus indexed and properly stored transparencies;
- wall charts and models are also available to outline the physiology of the eye and the differing aspects of low vision.

#### Media Coverage

As resources for space and time purchase are always inadequate (or non-existent), local human interest stories of those with low vision may be prepared and provided for press, radio and television. Personal interviews of competent, well adjusted persons are worth promoting. Magazine articles can also prove valuable in exploring the general misunderstanding related to non-obvious but nevertheless significant visual impairment.



### Locating Low Vision Consumers

Many potential users of low vision services have been encouraged to seek assistance as a result of increasing public awareness of the availability of these services. This in itself is an important value of a definite effort to develop a programme of public education distinct from fundraising activities which sometimes intensify emotional barriers.

Public education is important, necessary and requires considerably more attention than that given up to the present time, if the rehabilitation climate is to be improved substantially.

WORKSHOP III  
STUDENTS WITH LOW VISION



## A STIMULATION PROGRAMME FOR YOUNG CHILDREN

Mary Guy and Jan Wulff

The aim of this workshop is not to present conclusive facts, but to show that we are obtaining positive results which encourage us to continue and expand this type of programme.

The Royal Blind Society (RBS) of New South Wales is currently celebrating its centenary year. Amongst the services it offers are: field services, adult assessment and training unit, library services, student services, aids, low vision clinic, workshop, hostel and nursing home accommodation, recreation and the Child Development Unit.

The Child Development Unit has been established in its current form for several years and the staff include:

- two social workers - one of which is the unit coordinator;
- two full-time and one part-time occupational therapists;
- kindergarten teacher;
- two part-time psychologists;
- consultant physiotherapist and speech therapist;
- part-time music therapist;
- orthoptist seconded from Sydney Eye Hospital one day per week;
- swimming instructor one morning per week;

• secretary.

We also have occupational therapy and social work students at various times throughout the year. As you can see, we have a large staff and it is important that we adopt a team approach and keep communication channels open.

We are backed by an Honorary Medical Advisory Panel including paediatricians, ophthalmologists, a paediatric psychiatrist and orthoptist, who meet regularly with staff to assist in case discussion.

The children are referred from a number of sources - doctors, hospitals, family, friends, etc.- and are initially visited by the social worker who will coordinate the case. The needs of the child and family are assessed and appropriate personnel become involved if the family desires it.

We are basically family-oriented and offer a home-based guidance programme which may extend to community programmes such as playgroups and kindergartens. Additional services include playgroups, one for babies and mothers and one as a preparation for kindergarten, water confidence classes, movement to music, seminar/workshops, discussion groups and a toy library.

As with all intervention programmes, early referral is desired. Very few blind children have no vision at all, and it is important that the residual vision, however minimal, be stimulated as early as possible so that they may make full use of their remaining sight. It is also essential that they remain under specialized medical supervision, to ensure any alteration in their eye condition can be diagnosed and that they receive full benefit from any low vision aids that may be applicable to maintain maximum functioning of their residual vision.

The staff at the Child Development Unit felt that there was a lack of basic information regarding what the child could actually see, how far he could see and how best he could use his vision. Observations were not always correct. Thus we acquired the services of an orthoptist who was seconded from the Sydney Eye Hospital for one day a week, to assist us in correlating the children's residual vision



with their levels of functioning and provide much needed staff support in visual knowledge.

#### Orthoptist's Participation

It must be remembered that very few blind children are totally blind and many have some usable residual vision. These children should be encouraged to use this residual vision at all times and integrate their visual messages with their other senses. Traditional assessments of visual acuity levels do not often give a very clear idea of their level of visual functioning and therefore it is necessary to integrate the results of these tests with careful observation of the child's level of functioning in different situations, so that the child can best be guided in correlating his visual, auditory and tactile messages. Because functioning and efficiency are contingent on physiological, psychological, intellectual and environmental factors, they are likely to be unique to each person and thus incredibly difficult to assess and record accurately.

Development of normal visual function in the normally sighted child depends on a normal anatomical and physiological visual system, a healthy eye and direct visual pathways to the brain. A clear image must be focused on the retina from which fibres pass via the optic nerve to the optic chiasma and then via the optic tract to the lateral geniculate bodies, optic radiation and striate areas of the visual cortex.

Any hereditary or acquired condition that causes an obstacle in this visual pathway may cause loss of all or part of the visual function. If the pathway is functioning normally, the child's visual functioning develops, depending on the intensity and variation in stimulation for using vision.

As the optic nerve is incompletely myelinated at birth, the neural system is immature and peripheral components of the visual system mature earlier than the macular area within the retina. Foveal vision

(that is, fine central vision) is less developed at birth and thus only movement and gross form are perceived. Despite this, infants become aware of many visual sensations and begin to take in visual information. If the pathway is functioning normally, then these visual impulses are interpreted by the brain. If the child has incentive, he or she will continue to use this vision.

As the ciliary muscles are weak and cannot control fixation, objects are not in focus and light from any direction produces reaction, a bright light causing pupillary restriction as long as the retina and optic nerve are functioning normally.

After a few weeks, the infant begins to appreciate complex patterns and can discriminate mother from a stranger, reacting with a smile. The eyes begin to fixate and track a slowly moving object two to three feet from the face, which leads to slow pursuit movements elicited by the Catford Oliver Drum. Accommodational focusing at various distances increases the ability to see moving objects eight to ten feet away, but poor accommodation may reflect limits on sensitivity other than adaptability and is characteristic of impaired visual function. Reaching toward an object is indication that discrimination and recognition of the environment is occurring, and some degree of depth perception is possible at five inches. Gradually, flexible accommodation and convergence is noted and the infant begins to direct his or her eyes voluntarily. This is closely followed by eye-hand coordination.

As the fovea continues to develop, acuity improves and binocular vision (use of the two eyes together) and colour perception stabilizes. Improved visual motor coordination is indicated when a child can reach for a toy with one hand and good aim, look back and forth from one object to another, turning the head after dropping objects. As the visual system becomes more developed, the child becomes more active and then begins to vocalize, with increasing attention being paid to smaller size and detail. As the convergence and accommodation mechanisms mature, the child is able to discriminate, recognize and perceive a wide variety of visual patterns, and this basic development is encouraged in the partially seeing child by the use of this programme. It is vital that the child be motivated to use as much

of his residual vision as often as possible.

In the Child Development Unit, as many of the basic orthoptic diagnostic procedures as possible are adopted to assess the actual level of visual functioning. The child's visual acuity is assessed for near and distance with the most applicable tests of the following: Snellen's Letter Chart, Sheridan Gardiner Letter and Balls Tests, "E" and Picture Charts, Stycar Toys, the Catford Oliver Optokinetic Drum and tests for intermediate distances, if there is a large discrepancy in near and distance acuity, as in albino children.

Colour vision is assessed with the Matsubara Colour Vision Chart and confrontation field tests are performed. The child's pupillary reflexes and ability to converge and accommodate are noted, along with any defects of binocular vision or ocular motility, including squint.

Once the level of visual functioning has been discerned, the ordering of appropriate low vision aids may be necessary to ensure adequate use of the child's residual vision, especially for near in the form of magnifiers, or telescopes for distance, always ensuring the child is wearing the appropriate spectacle correction. When a magnifying aid for near is used, children and parents are advised on adequate lighting techniques, the most suitable contrast, the limitations of the magnifier, and the best distance from the work that the instrument should be held. Distance aids are also useful for blackboard and playground use.

There is a definite need for positive support from teacher, parents and therapists in assisting these children to use these aids efficiently. The child's visual perception and visual efficiency skills must be encouraged so that the visually impaired child can read as well as possible with the most suitable aids available.

## Low Vision Programme

The emphasis towards "blind" children has changed considerably over the past years. Traditionally, visual acuity has been used as the criterion for determining the degree of usable vision of an individual. Often children with very low measured visual acuity were given little or no opportunity to develop visual skills because their vision was too limited to ever be a primary source of learning. Many children with significant levels of residual vision amenable to improvement through training were, in essence, taught or allowed to become functionally blind. Placements in segregated settings, emphasis on "sight saving" and training restricted to sense modalities other than vision helped to actualize this self-fulfilling prophecy. This, coupled with a tendency for overprotection, attitudes of pity and naivete, lack of acceptance on the part of sighted individuals and fluctuations in teacher attitudes, served to severely limit opportunities for visually impaired children.

However, from conserving or saving sight, children are now encouraged to utilize their residual vision and to integrate the information they can receive into the information they receive through their other senses whenever possible. Our low vision programme is based on the philosophy of Natalie Barraga, that is, that seeing is a learned process and that a specific, sequential programme of vision stimulation can be used to increase functional vision skills and use of residual vision in young children who are not totally blind.

From her research she found that:

- "the development of visual ability is not innate and automatic;
- visual ability is not determined nor can it be estimated by visual acuity measurement alone;
- visual ability and functioning is not related necessarily to the kind or degree of impairment



or loss;

- visual ability and efficiency may be learned through a sequential programme of visual experiences" (Moore, 1971).

Dr. Barraga developed a visual discrimination test based upon what is understood about the developmental nature of vision, that is, that low vision children learn to see in the same way as normal sighted children, but that they learn to see at a slower rate. The test was not devised to be a measure of visual efficiency upon which projections could be based, but was carefully constructed to be a reliable, diagnostic tool from which teachers could receive direction as to which specific areas of visual functioning should be emphasized by training. The activities, outlined in the Teacher's Guide, are:

- "visual discrimination of three dimensional geometric forms as to size, length, height, etc;
- visual discrimination of colour likenesses and differences;
- recognition of geometric forms and shapes to similar objects;
- recognition of object outline and coloured pictures of familiar objects;
- finer discrimination of object outline with inner details;
- association of letter and word symbols with pictures;
- recognition of individual letters and word symbols;



visual reading" (Moore, 1971).

Many of the young children we see are already integrated into various programmes - either a direct involvement with the Child Development Unit, or in community areas such as kindergartens and playgroups. Thus, we try and adapt Natalie Barraga's ideas to integrate with these other areas. It may mean adapting or grading play things to an appropriate size, or using brighter and better contrasting colours for the child to cope with according to his level of visual functioning.

The family is encouraged to participate in these activities. As the mother is usually present when a therapist is working with a child, it is an ideal time to take the opportunity to explain what you are trying to achieve, so that she can continue between visits.

The young child is taught to be visually aware of colour, texture, size and shape. Discrimination and recognition of differences and similarities are brought to his attention, and opportunities to take apart and put together aid visual memory. Books provide a pleasurable and motivating factor in "looking", as most children see things more clearly at a near point. Pictures need to be clear and simple at first, with good contrast between object and background. Detail and reduction of picture size follows as the child is still able to see them. Visual sorting and grouping tasks assist finer visual discrimination. Drawing and painting improve eye-hand coordination as well as emphasizing form, shape and colour.

Marvin Efron emphasizes that "visual perception is much more than clearness and sharpness of image. It is the learned ability to construct a visual image, to be able to distinguish characteristics, and to give meaning to what one sees" (Efron et. al, 1975). Barraga continues: "As the brain receives more and more information, there is an eventual accumulation of a variety of visual images and memories" (Barraga, 1970). Lighting, contrast of materials used and optimum conditions for concentration are all aspects for consideration by therapist and parent.

Efron says that "there is also a motivational factor to consider in working with the low vision child. Many of these children are

reluctant to use their vision, and it is difficult to motivate them to do so. They may have never used their visual senses and therefore do not miss seeing. In effect, they often have no need or desire to see. Such children must be taught to use visual skills and they must be reinforced when they succeed in using them" (Efron, 1975).

Our current method of assessment of the younger child is done with the aid of the Oregon Project for Visually Impaired and Blind Preschool Children (OR Project). It is suitable for a home based service and has been found easy to use by parents. There are three main parts:

- manual, containing an overview of material and how to use the programme;
- skills inventory, which has three purposes: to assess child's developmental level, select, appropriate teaching goals and record child's acquisition of new skills;
- teaching activities, which suggests how to help the child acquire each new skill.

These are general ideas and serve as a starting point for developing more specific teaching plans.

For older children, that is, four to five years old with reasonable near vision, a more structured programme is offered. It is in this group that the decision often has to be made about whether the child will need special schooling or will be able to integrate into a normal school system. The Marianne Frostig programme has proved to be a very useful tool in assisting these children.

The programme was designed for use in visual perception training, by regular classroom teachers in primary grades and for young children with learning difficulties.

The Marianne Frostig Developmental Test of Visual Perception was developed to establish the child's level of performance in each of five areas of visual perception to which the worksheets apply in the

programme.

Both the test and worksheets focus on the five visual perceptual abilities most necessary to academic development. These five are:

- visual motor coordination, that is, the ability to coordinate vision with movements of the body or with movements of a part or parts of the body. The smooth accomplishment of nearly every action depends upon adequate eye-motor coordination;
- figure-group perception, that is, the ability of the child to focus on an object without being distracted by the visual image of other objects or without being influenced by anything else that may be in the vicinity, for example, being able to pick out and go straight to his father in a group of men, without being distracted by the other people around;
- perceptual constancy, that is, being able to recognize an object, regardless of the way it is presented - for instance, the concept of two, whether it is written out, or the letter two, or two ducks, two halves, etc;
- position in space, that is, how you see objects in relation to yourself, for example, door to your right, the ceiling above you, the floor below you.
- perception of spatial relationships, that is, being able to perceive two or more objects in relations to one another, for example, book on table, chair on floor.

The Marianne Frostig Programme is essentially used by us as a visual learning aid; the fact that it aids perceptual learning also is a bonus. The children must show a readiness for this type of pencil/

paper task routine in order to participate and gain from the experience.

While working through the worksheets it may be necessary to reinforce some aspects, either by adapting existing worksheets or by using play material. Thus the children always look forward to the toy or game brought each week and left until the following visit. The play material often encourages play between other siblings and parents.

The programme usually takes about a year, with weekly visits of half to one hour each, depending on each child's ability. It is carried out by the occupational therapist or kindergarten teacher. Of the four children who have completed the programme, all have made good progress. All of these children attended normal school towards the end of the programme and undoubtedly the extra stimulation has aided these results.

Of the three children currently doing the programme, one is attending normal school and it is anticipated the other two will also attend normal schools. At the beginning and end of the Marianne Frostig Programme, children are tested with the Marianne Frostig Development Test of Visual Perception and the Natalie Barraga Visual Efficiency Scale. Testing is done under a variety of conditions and the results often depend on the child's reaction to it.

Very few are familiar with a formal testing procedure; often their manual skills are poor and some concepts may be lacking. However, the tests and scale are a means of monitoring their progress. The test results are not always indicative of improvement. Often the greatest achievement is the ability to complete both the Marianne Frostig test and Visual Efficiency Scale quickly and effectively. Initially, when using the worksheets, the children need reassurance, repetitive instruction and orientation to the page, both left to right and top to bottom. However, towards the end of the programme they are able to complete tasks with a minimum of fuss and much pride in their achievement. While we are not aiming to take over the teacher's role, it must give a child confidence in having an understanding of the academic side of learning and may make the child's entry into school life a little easier.



The New South Wales Department of Special Education is providing more and more itinerant teachers to assist these children and their teachers in the normal school system.

In summary, our main aims are:

- to develop a child's visual skills to the highest possible efficiency;
- to prepare him more adequately, visually, for learning experiences at school;
- to provide some evidence for determining his educational medium when such a determination is necessary.

We will now continue with some case studies which illustrate the results of our programme to date.

#### Case Study 1 : Katie

Diagnosis: Bilateral congenital cataracts with a right convergent squint and nystagmus; no binocular vision.

Date of Birth: 5.7.73

Katie was referred by her mother in October, 1976, when she was approximately three years old. She had had both left and right cataracts needled and aspirated and a right convergent strabismus straightened.

The results were: R.V.A. 3/18, N8  
L.V.A. 3/12, N5

Katie was assessed by an orthoptist in March, 1978 and she commenced a low vision programme in June, 1978. Katie is a bright, alert little



girl, with a supportive family. She responded well to the Marianne Frostig programme as can be seen in Figure 1, (p. 396). The Development Test for Visual Perception was carried out at the beginning and end of the programme and Figure 1 demonstrates the results. The area of greatest difficulty was figure-ground which you will observe occurs with the following case histories as well. Katie also did the Natalie Barraga Visual Efficiency Scale in December 1978 and just recently, with an increase in score of four. (Figure 2, p. 397).

In March 1979, her R.V.A. was 4/60

her L.V.A. was 4/24

With both eyes opened she tested at N18, with a magnifier at N5.

Thus her actual visual acuity appears to have decreased in twelve months, although her visual functioning has increased.

Katie commenced normal school in February, 1979. She is now repeating first class, having progressed from C to A grade this year, and is doing very well with a sympathetic teacher. The assistance of an itinerant teacher is being pursued. Her mother (also with a diagnosis of bilateral cataracts) is keen for her to continue in normal school.

#### Case Study 2 : Alex

Diagnosis: Congenital bilateral cataracts, intermittent right divergent squint and nystagmus.

Date of Birth: 2.5.74.

Alex has been known to the Royal Blind Society since June, 1975, when she was fourteen months old. She had had several operations up to this time. Contact was maintained by the social worker in a supportive role. In July, 1978 her mother was contacted regarding the low vision programme and Alex commenced the Marianne Frostig programme in August, 1978.

Age Equivalent  
Scale 4cm = 1yr

Katie: Bilateral Cataracts

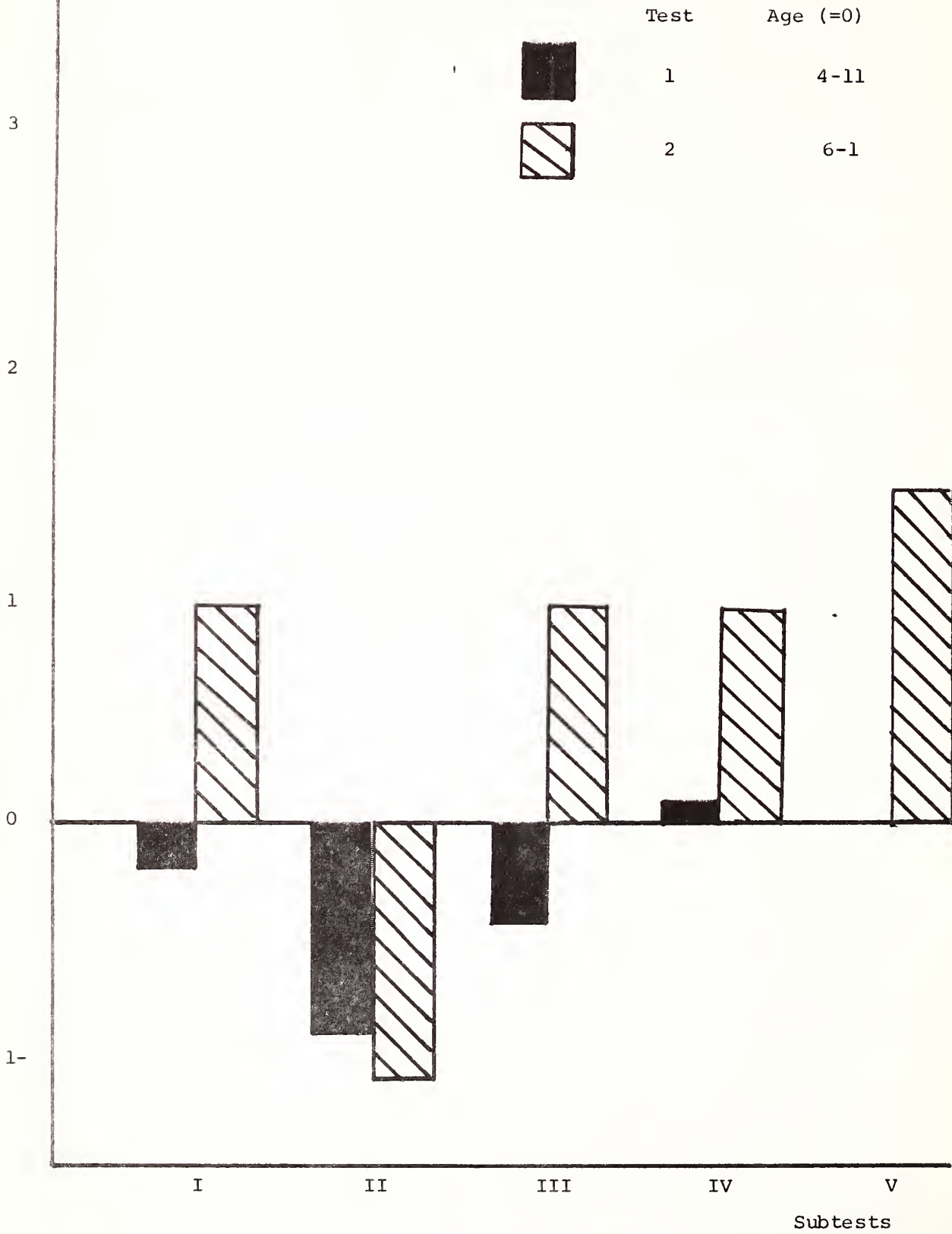


Figure 1.

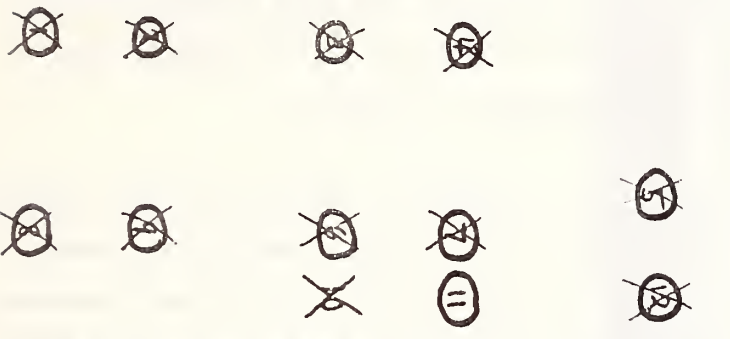
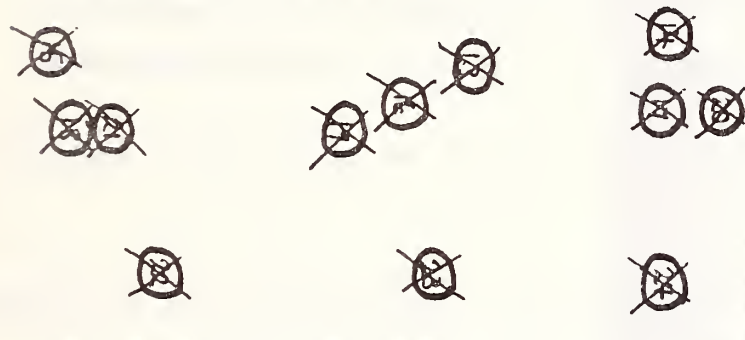
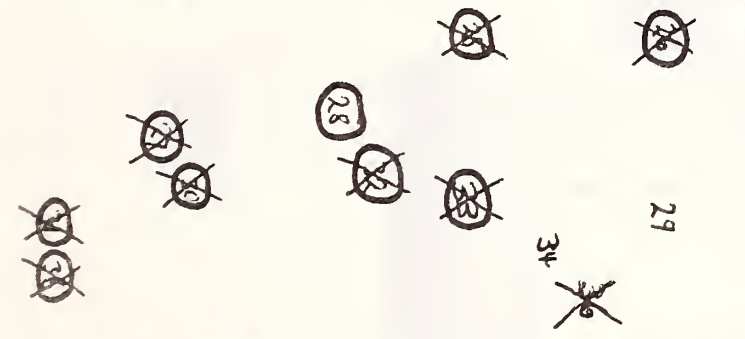
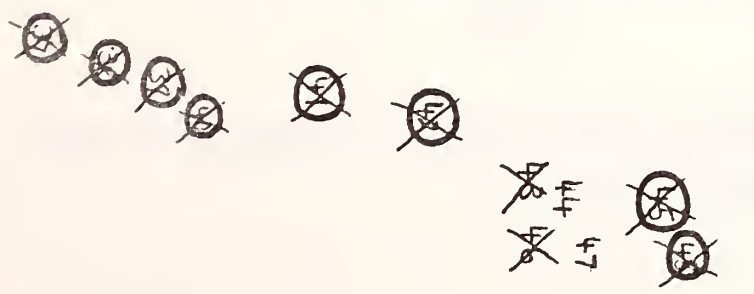
Katie:		Age	Total		
		5-5	40		
		6-8	41		
		<del>O</del> X Marginal Efficiency			
Low Efficiency				Satisfactory Efficiency	Visual Skills and Behaviours Related to Sections and Items in the Scale
				<u>Section I</u> Discrimination of: Geometric form Object contour Light-dark intensity Size and position	
				<u>Section II</u> Discrimination of size Object and abstract figure detail Position in space Image constancy of outlines, pattern details and objects	
				<u>Section III</u> Visual Closure Spatial Perspective Discrimination of object and abstract figure details	
				<u>Section IV</u> Discrimination of: Size, position, sequence and relationships of letter and word symbols and groups of symbols	

Figure 2.

At this time the orthoptist tested her:

R.V.A. at 3/60, N48

L.V.A. at 3/24, N24

The results of the Marianne Frostig Developmental Test of Visual Perception before and after the programme can be seen in Figure 3, (p.399 ). During this time Alex was also seeing an orthoptist and attending school, which provided extra visual stimulation. The area of most difficulty was once again subtest 11, that is, figure-ground. The results of the Natalie Barraga Visual Efficiency Scale carried out at the same time as the Marianne Frostig test, showed a vast improvement as can be seen on Figure 4, (p. 400).

Alex commenced normal school in February, 1979 and she is now in first class. The school is very supportive and aware, having had several other low vision children. The school medical officer has discussed schoolroom lighting, etc. and every effort is being made for Alex to remain in the school. The Department of Education has expressed a willingness to supply large print if needed and readily available.

At present, Alex is coping very well with the books used by the rest of the class.

In October, 1979, following a series of treatments on the C.A.M. Vision Stimulator, her R.V.A. was 3/36

L.V.A. was 3/24

Her improved visual acuity was most likely due to the treatment on the C.A.M. Stimulator and the fact that she is now at school, she is better able to cope with testing procedures.

### Case Study 3 : Kerry

Diagnosis: Retrolental fibroplasia (RLF), also myopia with a small left convergent squint.

Date of Birth: 3.1.75



Age Equivalent  
Scale 4cm = 1yr

Alex: Bilateral Cataracts

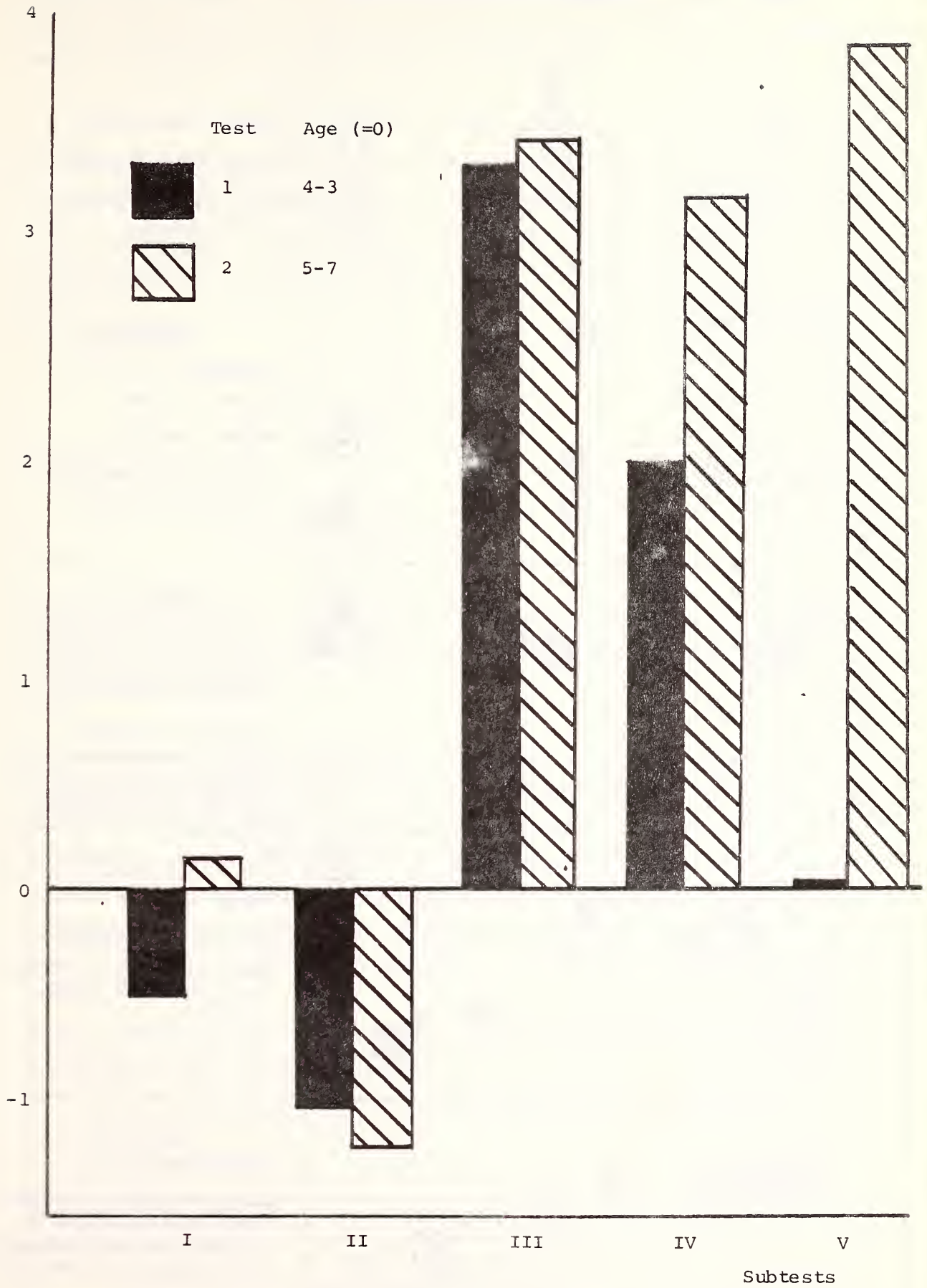


Figure 3.



Alex:	Age	Total			
	4-3	27			
	5-7	39			
Low Efficiency		<div>0x Marginal Efficiency</div>		Satisfactory Efficiency	Visual Skills and Behaviours Related to Sections and Items in the Scale
					<div>Section I</div> <div>Discrimination of:</div> <div>Geometric form</div> <div>Object contour</div> <div>Light-dark intensity</div> <div>Size and position</div>
					<div>Section II</div> <div>Discrimination of size</div> <div>Object and abstract figure detail .</div> <div>Position in space</div> <div>Image constancy of outlines, pattern details and objects</div>
					<div>Section III</div> <div>Visual Closure</div> <div>Spatial Perspective</div> <div>Discrimination of object and abstract figure details</div>
					<div>Section IV</div> <div>Discrimination of:</div> <div>Size, position, sequence and relationships of letter and word symbols and groups of symbols</div>

Figure 4.

Kerry was referred by her ophthalmologist in September, 1975, at the age of eight months. Through continued contact with the social worker she was assessed by the orthoptist in March 1978:

R.V.A. at 6/12

L.V.A. at light perception only

We first saw Kerry in July, 1978 with a view to commencing the Marianne Frostig Programme, but due to immaturity she did not start until March, 1979. She did the Developmental Test of Visual Perception and the Visual Efficiency Scale at this time.

In April 1979:

her R.V.A. was 6/24, N8

L.V.A. was light perception

In December 1979:

her R.V.A. was 3/18, N6

colour vision normal

There was no substantial improvement in vision except for near. This may have been due to the fact that she is now older and more responsive to testing.

Although Kerry has not completed the Marianne Frostig Programme, the Developmental Test of Visual Perception was done to show the results to date. It shows considerable improvement in most areas. (Figure 5, p. 402). She has also shown marked improvement on the Natalie Barraga Visual Efficiency Scale, although the final score does not indicate this - she was unable to do some items obtained correctly the first time. (Figure 6, p.403 ).

Kerry commenced normal school this year and is coping well with the assistance of an itinerant teacher.

#### Case Study 4 : Jessica

Diagnosis: Optic nerve dysplasia, right convergent squint with nystagmus.

Age Equivalent  
Scale 4cm = 1yr

Kerry: Retrolental Fibroplasia

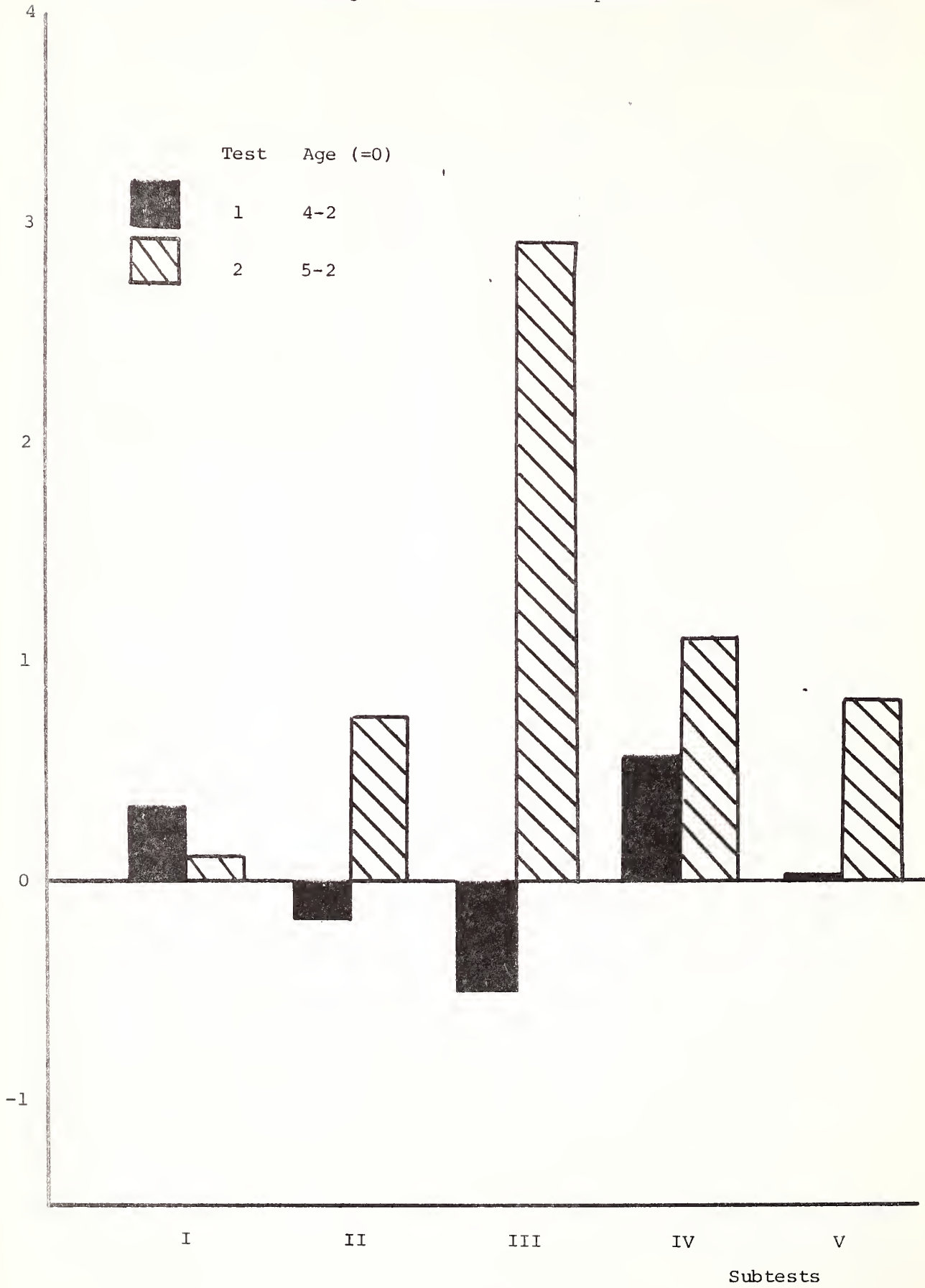


Figure 5.

Kerry:      Age      Total  
                  4-2      26  
                  5-2      29


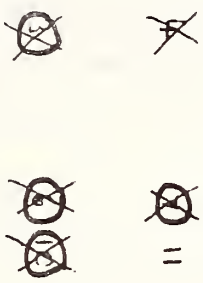






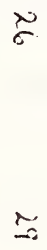


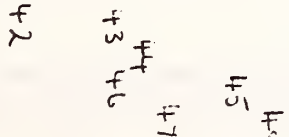
Low Efficiency	Marginal Efficiency	Satisfactory Efficiency	Visual Skills and Behaviours Related to Sections and Items in the Scale
			<p><u>Section I</u></p> <p>Discrimination of:</p> <p>Geometric form</p> <p>Object contour</p> <p>Light-dark intensity</p> <p>Size and position</p>
			<p><u>Section II</u></p> <p>Discrimination of size</p> <p>Object and abstract figure detail</p> <p>Position in space</p> <p>Image constancy of out- lines, pattern details and objects</p>
			<p><u>Section III</u></p> <p>Visual Closure</p> <p>Spatial Perspective</p> <p>Discrimination of object and abstract figure details</p>
			<p><u>Section IV</u></p> <p>Discrimination of:</p> <p>Size, position, sequence and relationships of letter and word symbols and groups of symbols</p>

Figure 6.

Date of Birth: 11.8.76.

Jessica was referred to the Royal Blind Society at the age of four months. Regular contact has been maintained since April, 1977. Jessica has a warm, loving family and has developed physically and mentally within normal age limits. On the Oregon Project Student Profile, she presents as being about twelve months ahead in all skills except fine motor, where she is about average for her age.

This is no doubt due to her parents, who have been very realistic in their acceptance of Jessica's visual handicap and treated her as a normal child, providing the extra stimuli where needed.

It was thought at first that Jessica had no sight at all, but her mother noticed reaction to strong light and at nine months felt she was focusing on and following some objects at close range. We then felt it was appropriate for the orthoptist to see Jessica.

Orthoptic testing of Jessica is as follows:

It was found that her visual field was reduced. The Catford Drum elicited no response. However, with the Sheridan Gardiner Balls, her visual acuity was 6/9.

Jessica is being visited every four to six weeks. Usually much time is spent during that period explaining the use of toys and equipment which have been brought along for her mother to use with her at the most appropriate time to elicit maximum response, both cognitively and visually.

Jessica is able to match, sort and grade colour, match and grade size and shape and do simple jigsaws. She enjoys scribbling and can usually tell you what she has drawn. She enjoys picture books and can recognize large, simple pictures and some letters and numbers about 2.5cm high.

At the present time we would be unwilling to speculate whether Jessica will become a sighted or braille student. However, the ability to use her residual vision to best effect will aid her in many other



practical and personal activities.

It is anticipated that Jessica will be attending normal kindergarten next year and St. Lucy's School for the Visually Handicapped in 1982. Hopefully she will be integrated into normal school at some time in the future.

In closing, we would like to say that we are extremely grateful to the orthoptists from Sydney Eye Hospital who have been seconded to assess these children and provide a vital link in the administration of this programme.

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IMPLEMENTATION OF A LOW VISION TRAINING PROGRAMME  
IN A RESIDENTIAL SCHOOL FOR THE VISUALLY HANDICAPPED

Keith' Marshall

For those members of the audience who heard my previous paper at this conference, it is quite obvious that there are few places in Asia providing education programmes for low vision children. For many people in the South East Asian Region, the International Council for the Education of the Visually Handicapped (ICEVH) regional conference was responsible for arousing the interest in low vision training in this area. This conference, which was held in Penang in November, 1975, followed immediately after the Pan Pacific Rehabilitation Conference in Singapore. Many of the delegates had attended the Singapore conference the previous week, during which Mr. George Marshall of Exhall Grange School, England, had presented a paper on low vision. Mr. David Sebastian, the Principal of the Singapore School for the Blind also presented a paper at the Penang conference on the same topic, outlining the work he had started in his own school.

Dr. Jeanne Kenmore, who at that time was the President of the ICEVH and the Director of Education for the American Foundation for Overseas Blind, was extremely keen to see a follow-up in the Asian Region. I then decided to ask Dr. Kenmore to give a one week training course at my school in June 1976 and representatives from seven countries attended this course. The response to the course was excellent and considerable enthusiasm was engendered. For the next year, research into existing information on low vision was carried out at the Ebenezer School, and the results of this were distributed to all members of the teaching staff.

In August, 1977 the ICEVH held its international conference in Paris. During this conference, papers on low vision were given by Mr. Freddie H.G. Tooze of United Kingdom, Mr. K. Inde of Sweden, Dr. L. Solnsteva of USSR and Dr. E.J. Rex of United States of America.

Before I describe the implementation of our programme, I feel it is essential to provide a general background of Hong Kong to appreciate some of the difficulties we encountered. To anyone who has lived in or visited Hong Kong, it must be said that Hong Kong is *people*. Hong Kong, which is a British Crown Colony and part of mainland China, is situated in a geographical area of less than 1,295 square kilometres. Its present population is close to the region of 5 million and in the past three decades, its population has increased by over 600%, with illegal immigration from China and surrounding South East Asian countries continuing at a somewhat alarming rate. Therefore, it must be apparent that, although education is compulsory for nine years of a child's life, concentration has been on providing education in quantity rather than quality. Under the circumstances this is hardly surprising. Thus, in many areas, the standards of teaching methods, educational development and research are still many years behind the standards of the Western World.

Nevertheless, we decided to instigate an experimental low vision programme. This will be evaluated after three years of operation and will be continuously revised as the need for change becomes apparent.

In the preparation of any low vision training programme, the need for careful assessment and evaluation of the child is essential. To help achieve this aim, a specialist team was assembled. The team comprised:

- an ophthalmologist;
- a paediatrician;
- a consultant optometrist;
- a qualified teacher specially trained in low vision work;
- the administrator who coordinates and organizes the activities of the whole team.

As we were fortunate to acquire the volunteer services of a consultant



ophthalmologist and paediatrician, and initially the professional services of a consultant optician from Keeler Optics, we added to this professional group a nurse, a teacher and an administrator from our own staff. Our first practical step was to carry out a vision screening programme.

During the period of testing, it was essential to train a member of staff who would assume responsibility for this important task and one teacher was selected and trained for this purpose.

At the end of the testing it was necessary to allocate the children to the various areas of training in the low vision programme.

Before this could be started, an examination was made of the classroom environment. Changes were made to create a suitable visual environment in terms of:

- lighting;
- aesthetic quality of the visual environment;
- equipment and classroom furnishing.

In all classrooms the light was generally adequate, but required increasing for certain children. Therefore, overhead lighting near the windows was increased for those requiring better illumination and clip-on desk lights were also introduced in certain cases. It was decided to leave the remainder of the room with lower illumination for those children who required it (for example, albinism and cataract). Many of the walls and working surfaces reflected light, causing considerable glare, and it was decided to change this by repainting the walls and changing the surfaces of the desks and working areas. Blinds were also added for redirecting or shielding sunlight when necessary.

To improve the existing decor which was dull and visually uninspiring, pastel shades were used and temporary pin-boards were installed at a suitable working height to display visual materials. Pictures were hung on the walls to add further colour to the environment. Much



of the existing classroom equipment was static and arranged in a formal fashion, so new desks and cupboards were designed which were mobile (on castors) to enable children to move their desks around the room as light conditions changed during the day.

In most schools for the blind, teachers are more familiar with the needs of non-visual children and use traditional teaching methods which are based on tactile rather than visual concepts. Therefore a staff education programme was required for certain basic areas of training. Lectures were given on the structure of the eye, eye defects and their effect on visual functioning, eye care and hygiene, adaptation of educational materials, preparation of overhead transparencies, slides and many other methods of visual presentation. These lectures were supplemented during the course of the training programme by instruction on visual teaching methods in the various subject disciplines.

Throughout this period of early development, the members of the low vision team concentrated on the development of the low vision teaching programme which consists of the pre-training adjustment and visual experience programme, the pre-training adjustment test, the visual training programme and the development of individual reading programmes in English and Chinese. In the development of these special programmes and in the complete absence of any literature in the Chinese language, we were forced to develop our own material from a wide range of sources. These came mainly from America, England and Sweden and were gradually adapted according to the needs of our children. The programme, initiated in the kindergarten, has progressed through primary grades one to four during the last eighteen months. In spite of this progress, certain problems became apparent which demanded solutions.

The first problem we faced was the availability of specialist equipment, both for optical and teaching purposes. Most of the equipment had to be imported, which was both time-consuming and extremely expensive. In many cases special equipment was adapted from models in use in other parts of the world and further developed to suit our particular needs.

I have already mentioned that there is no literature in Chinese and, as many members of the staff were insufficiently proficient with the English language for the purpose of intensive studies, a great deal of time has been spent in translating articles and booklets and producing educational resources in both English and Chinese. In the teaching of Chinese language, the difficulties encountered in Chinese calligraphy presented special problems. Due to traditional and cultural reasons, calligraphy is based upon extremely strict rules and regulations which are often difficult to apply in the teaching of low vision children and, therefore, a special teaching programme had to be developed using a wide variety of methods. This was done by a means of slides, overhead projectors, work-sheets and other means which were suitable for each individual child.

Another difficulty encountered in a residential school was the presence of totally blind and partially blind children in the same classroom, being taught by the same teacher. We wanted to ensure from the very beginning that the new methods which applied to our low vision children, the new games, activities and ideas could also be extended to the totally blind children, to include them in what was an entirely new approach in teaching materials, and particularly teaching methods.

In many parts of Asia, the majority of teachers use methods of teaching which are primarily class-oriented rather than pupil-oriented and it has taken, and is still taking, a great deal of time and patience to convince members of teaching staff that only individual approaches to teaching are acceptable in this situation. This problem, I am sure, will apply to many educational programmes in Asia whenever low vision teaching is introduced. It also demands from the teachers the production of lesson materials in both braille and in printed material, thereby involving a greater amount of work.

Another difficulty we have faced is achieving some form of objectivity in assessing the value of our work. In the whole of Hong Kong, there are only one hundred and seventy blind children in schools, and we are looking for outside assistance within the next two years for an objective evaluation of our efforts. Although we can import the use of various tests from the West, many of these are culturally

biased and may not prove effective for our use.

There are, however, encouraging developments which augur well for the future. We have recently received contacts from China who are interested in our programme. Educators from five other Asian countries have already visited our school for an in-service course, and the Hong Kong Society for the Blind, in conjunction with my organization, intends to establish a low vision clinic for adults within the next twelve months. These are, indeed, hopeful signs for the future and I am sure that with the aid, advice and guidance from experts in other regions, we may be able to establish Hong Kong as an area of specialization in low vision which will benefit low vision programmes in many parts of South East Asia.

## CLASSROOM HANDLING OF CHILDREN WITH LOW VISION

Hector Maclean and Barbara Johnston

The School Medical Service runs a special diagnostic clinic to identify children who are visually impaired. Referrals are made to this clinic from:

- ophthalmologists;
- school medical officers, who do routine vision testing during medical inspections of school children;
- Low Vision Clinic, Kooyong;
- various sources within the education field.

The clinic is staffed by:

- the school medical officer in charge of services to the visually impaired;
- either of the two ophthalmologist consultants to the School Medical Service;
- an education officer experienced in working with handicapped children;
- a psychologist from the Education Department's Special Services Division.

Information from this clinic is aggregated with a report from the class teacher or kindergarten teacher.

The aim is to identify those children whose better eye has a corrected



vision of 6/18 or less and who need extra assistance to enable them to stay in an ordinary school and be educated at the same pace as their normally-sighted contemporaries. Children with a visual acuity better than 6/18 who have major field defects may also need extra help.

Two thirds of the children in the State who would benefit from this specialist help receive it after being assessed in this clinic. One third receive similar help from the Royal Victorian Institute for the Blind. However, there is still a reservoir of unidentified children, probably small in number, who come within our limit, and a further number who although theoretically within range, are coping very well in school without help.

Dr. Gillian Cameron is the relevant school medical officer in charge of the clinic and she has provided the following statistics:

Approximately 150 new referrals to the Partially Sighted Clinic were seen between January 1977-1980 (inc.). Of these, 77 were male and 72 were female. Twenty-one of these referrals were found to be outside the partially sighted range (14%) and 129 children (86%) were found to be partially sighted or worse.

*Nystagmus* was commonly found, that is, in 55 cases of all children in the partially sighted group. Apart from 10 primary congenital, there were 27 secondary to other ocular pathology (21%) and in 18, cause was not established (14%).

*Significant refractive errors* too were commonly found mostly in association with other ocular conditions. Only one case had pathological myopia with no other defect. Twenty-six cases in all had refractive errors (29%), 7 cases were not fully corrected when examined, 4 cases were, and in 15 cases, data was insufficient.

*Oculomotor problems*, most commonly squints (including nerve palsies) and ptosis were also common - 16 cases (12%).

Using the World Health Organization classification for low vision and blindness, the partially sighted children fell into the following groups:



		No. of cases	Percentage
Low vision Group I	VA 6/18	92	70
" " Group II	VA 6/60 or where visual fields 20 degrees	24	20
Blindness Group III	VA 3/60 or where visual fields 10 degrees	8	6
Blindness Group IV	VA less than counting fingers at 1 metre or where visual fields less than 5 degrees	2	1.5
Blindness (Total) Group V	No light perception	3	2.5

The conditions contributing to these partially sighted children were as follows:

	No. of cases	Percentage
Albinism	8	6
Anirides	5	4
Anophthalmos	1	0.75 = 1
Bulphthalmos	1	0.75 = 1
Cataracts	14	11, of these 43 were operated on, 57 were not
Corneal Lesion	5	4
Ectopia Lentis	3	2
Glaucoma	2	1.5
Macular Degenerations & Aplasias	25	20
Microphthalmos	2	1.5
Monochromats	1	1
Primary Congenital Nystagmus	10	8
Primary Optic Atrophy	1	1
Optic Atrophy Secondary	9	7
Optic Atrophy of Unknown Cause	7	5.5
Retinal Detachment		0
Retinitis Pigmentosa	5	4
Retinoblastoma	3	2

	No. of cases	Percentage
Trauma	1	1
Retrolental Fibroplasia	3	2
Tumours (incl. 2 Von Recklinghausen's)	5	4
Unknown		7

*Miscellaneous* causes of visual problems included:

Ligneous conjunctivitis  
 Absent eyelids and glands  
 Osteopetrosis  
 Iritis  
 Avitaminosis A  
 Stills Disease  
 Laurence Moon Biedl syndrome  
 Craniodystasosis  
 Hydrocephalics  
 and a ? Marfan's syndrome.

The 14% of non partially sighted children has similar conditions as follows:

	No. of cases
Albinism	1
Cataracts	3 - operated = 1 not operated = 2
Macular problems	3
Microphthalmos	1
Primary Congenital Nystagmus	1
Secondary Nystagmus	2
Nystagmus of Unknown Cause	2
Primary Optic Atrophy	1
Refractive Errors	6 - 3 fully corrected 1 under corrected 2 - data not given
Retinal Detachment	1
Retrolental Fibroplasia	2

## No. of cases

Oculomotor	3
Unknown	1
Iritis	1
Homonymous hemianopia	1

These figures are comparable with those reported from, for example, the United Kingdom. They might be summarized in terms of the associated visual field defects:

Central Defects	40
Peripheral Constriction	6
Hemianopia	2
No Significant Field Defect	36
Uncertain	16

Many of the central defects are covered by nystagmus and may only become obvious as the child approaches adulthood and the nystagmus lessens in frequency and amplitude.

It would be of interest to compare these figures with those provided by Hugh Taylor in his survey of children surveyed by the Royal Victorian Institute for the Blind (RVIB) Pre-school and Home Advisory Department (See Table 1, p. 425).

We try to assess each child's ocular status without too much reliance on the accompanying ophthalmologist's report (even with our own patients). It's a useful game to try to find what has been missed and to determine not to miss it again.

The techniques used are fairly standard. Firstly, the children have to be "chatted up". Many of them are a bit scared of seeing all these strange people and at the back of their minds is probably the scary thought that an eye examination means "the dreaded drops". A little bribery and corruption of the kind of which dentists disapprove goes a long way to help. The current television advertising campaign for "Smarties" has been a great help. Greeting children as they come in as friends, rather than potential foes, also helps. Coming down to

their level mentally and physically is also most useful. Let them believe, "I'm glad you've come to play with me!"

The tests made are as follows:

Visual acuity: Do each eye separately, then together for distance, with glasses on. It is often also worth doing the binocular distance vision without glasses so that you know what the child can do if he breaks or loses his glasses.

A standard internally illuminated Snellen chart is used where possible. If the child cannot see this or is unsure of the letters of the alphabet, the Sheridan-Gardiner Test is used instead. This has certain theoretical disadvantages when used in its single optotype form - giving rather optimistic results in amblyopic eyes - but this is far outweighed by the gain in the number of testable children.

When these methods fail, it is useful to remember that a "Smartie" at about half a metre is very approximately equivalent to 3/60 and "hundreds and thousands" at the same distance can be seen with the equivalent of 6/12 or better.

Reading vision is checked using preferably a standard reading chart as this allows assessment of any primary reading difficulties. The near letters of the Sheridan-Gardiner test are useful for those who have yet to develop reading skills.

Reading vision is tested at whatever distance the child prefers to hold the print and any gross variation from normal is noted.

Distance vision is checked at six metres where possible, but otherwise at three or even two metres.

Reading vision is generally tested binocularly. For occlusion in distance testing, a full aperture 820 Diopetre lens is used for children with nystagmus. For the others, a folded "Kleenex" (softer than "Scotties") is used. Something familiar to the child and which they know is not hard and uncomfortable is a definite advantage.

It is useful when checking the reading to show the child such simple aids as running a finger tip along under the words when reading them, or holding a thumb at the beginning and end of the line to aid in tracking. This is especially useful for those with constricted field.

We like to check the glasses prescription in a focimeter and, where the child's cooperation allows it, to check the refraction. It is sad to note that nearly a third of the children so checked could be improved considerably with a change of lenses. Aphakic eyes and eyes on atropine frequently haven't been given the necessary reading addition.

We now do an external eye and adnexae check. We look for squint, for head posture, eye movements (it is important to note if nystagmus has a null point and if this is away from the primary position), the eyelids and, where the child can cooperate, a confrontation field. We have a Friedmann analyser for private use, but not yet in the clinic. The Friedmann instrument is good for children as young as five, but even it cannot cope with nystagmus. A check on pupil reactions especially for light completes this part.

These points are of practical importance in the classroom: A child with a left homonymous hemianopsia should sit on the left side of his classroom, so that all things happening in the room - blackboards and teacher and so on - are in his seeing rather than blind field.

Similarly, a child whose nystagmus is minimal in a certain position of gaze should be placed so that most things he has to see are in that general direction from him.

A child who has to keep his pupils dilated with atropine to see past a central congenital cataract, an aniridic, or an albino can't cope facing a bright window. They all do much better with tinted glasses but usually they don't have them. Conversely, if the pupil is very small because of adhesions after surgery for cataract, it is advantageous to sit next to a window. Retinitis pigmentosa and other causes of night blindness are indications for plenty of light, and the tunnel vision of retinitis pigmentosa usually means sitting as far back from the blackboard as possible to ease tracking problems (the



board then subtends a smaller angle from the eye).

If there is any doubt at this point we see how children can navigate past obstacles such as chairs and desks in the clinic room, or how they manage with the lights turned down.

Three special checks follow:

Colour: Most partially-sighted children find the Ishihara Book too much of a mystery. The HRR test is much better, but sadly out of print. The City University test is done well by many children with central defects (macular problems) even when they are unable to cope with the pseudoisochromatic tests.

Stereopsis:

The Frisby test, which doesn't require special glasses, is better than the TNO test which does. The Titmus/Wirt Fly test is valueless as it can be made to give a very good result by a one-eyed child. The presence of even minimal stereopsis usually indicates reasonable hand/eye coordination.

Intra-ocular tension:

The Perkins hand applanation tonometer makes this easy on most children. Using a gentle local anaesthetic drop makes it easy to get subsequent dilating drops in without too much trouble, especially if a "Smartie" is offered for each drop instilled. It is most useful to check that buphthalmics are in control, that there isn't an unrecognized problem after cataract operations, and that myopes and aniridics, for example, don't have an associated glaucoma.

We then dilate the pupil with 1% cyclopentolate where we want to check the refraction, and with ½% Mydriacyl if we will be contented with a look around the fundus with both direct and indirect ophthalmoscopes.

If the retinoscopy findings are in disagreement with the glasses, distance vision is again checked with the retinoscopy lenses less 1 Diopetre sphere in the trial frame, then with a pinhole added unless there is still appreciable nystagmus.

While the pupils are dilating, the child is seen by the psychologist.

#### Visiting Teacher Service: Visually Impaired

The visiting teacher's role is to provide assistance to visually impaired students as recommended by the Ascertainment Committee. The visiting teacher is responsible, together with the teacher-in-charge, to continually monitor each student's placement and frequency of visits, and report to the Ascertainment Committee.

Assessment of the specific needs of each child in relation to his or her vision loss is the prime task of the visiting teacher. It is then the role of the visiting teacher to provide and assist the classroom teacher in the provision of appropriate learning experiences. There are three main aspects of the visiting teacher's role; emphasis on one or more of these aspects varies according to the needs of the child and the school.

#### Role of Consultant to the Classroom Teacher

- . explanation of the visual impairment and the implications of this in how it will affect the child's daily functioning;
- . assessment of the child and liaison with class teacher on setting of objectives and planning of programmes. Periodic review of progress in relation to objectives and re-stating of objectives if necessary;
- . advise on adjustments required in particular subjects, teaching methods, special skills or materials required;

- determine optimum classroom placement and lighting conditions;
- liaise between child, teachers, peers and other agencies involved.

#### Role of Specialist Working with the Child

- assessment of visual functioning and training in the use of residual vision and coordination with other senses;
- continual monitoring of the visual condition and, if necessary, referral of child to other agencies for assessment or advice, for example, Low Vision Clinic or School Medical Service;
- training in the use of visual aids related to the needs of the child;
- visual discrimination and perception. The child's visual awareness and skills to be trained by experiences with real and abstract forms;
- development of tactile skills to be used in conjunction with or instead of vision;
- development of short and long term memory skills (visual and auditory);
- provide instruction in special skills for low vision and totally blind students, for example, abacus, Visualtek, brailleing;

- development of organizational skills; this involves organization of materials, time and space;
- development of communication skills. Provision of experiences to develop and enrich language skills. This includes: development of listening skills to increase awareness of environment and as a mode of learning; creation of awareness of nonverbal communication (tone, posture and gesture); reading skills - determination of appropriate method of instruction and ensure that readiness skills are obtained; spelling, especially with braille readers - provision of appropriate learning methods, for example, recorded material; writing skills - advise on writing materials; implement programmes to improve pre-writing and writing skills; typewriting instruction - arrange for or implement typing programmes.
- develop skills and attitudes for meaningful use of leisure time;
- provide guidance to develop acceptance of impairment, self-confidence and independence;
- provide specific vocational and employment advice;
- develop orientation and mobility skills within the school environment. If additional skills are required, refer to an orientation and mobility instructor, then follow up orientation and mobility programme.
- provide or arrange experiences to develop daily living and social skills.

### Provision of Resource Materials for Teacher and Child

- assess the specific requirements of the child so that the most appropriate materials are used - large print, magnification aids or taped materials;
- monitor the effectiveness of the materials and adapt new techniques to overcome restrictions to vision.

### Evaluation

- compile records of assessment, objectives, programmes planned and keep a cumulative record of visits;
- continually evaluate progress in terms of the objectives and amend programmes if necessary.



Table 1.

SURVEY OF CHILDREN SERVED BY RVIB PRESCHOOL AND HOME ADVISORY DEPARTMENT

Carried out October/November, 1979.

Total 187 children included.

Details are given here on 170.

## Duration of Service

0-11	12-23	24-35	Months 36-47	48-59	60-71	72+
70	24	19	12	7	7	8

Terminations:

3            3            4            1

## Age of Commencement:

47	36	23	14	12	12	11
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Congenital Visual Abnormality = 109.

Males            = 96

Females        = 52

Unknown        = 5 (++)

## Present Age of Children (1/11/79)

0-11	12-23	24-35	Months 36-47	48-59	60-71	72+
7	34	20	23	27	26	32

N = 169.    Number under 6 years = 137.

The large number detected under age of six years is a most important finding. Add children at other centres;

St. Nicolas/Kew  
St. Pauls  
Monnington/Carronbank  
Visiting Teacher Service  
Yooralla? etc, etc.

and the total is far higher than comparable United Kingdom figures (on a pro-rata basis).

<u>Defects</u>	<u>Number of Cases</u>	<u>Percentage</u>	
1. Albinism	= 6	4.05	
2. Aniridea	= 3		
3. Anophthalmos	= 2		
4. Buphthalmos	= 4		
5. Congenital cataract	= 35	23.65	1
6. Corneal lesion	= 1		
7. Ectopia lentis	= 1		
8. Macular degeneration	= 0		
9. Microphthalmus	= 14	9.46	4
10. Optic atrophy	= 22	14.86	2
11. Pathological myopia	= 2		
12. Retinal detachment	= 2		
13. Retinitis pigmentosa	= 0		
14. Retinoblastoma	= 6	4.05	
15. R.L.F.	= 16	10.81	3
16. Other retinal defects	= 9		
17. Tumours (other than 14)	= 2		
18. Uveitis	= 0		
19. Other defects	= 37		
20. Data not available	= 22	i.e. Total with data = <u>148</u>	

Number of children with 2 defects	=	21
" " " " 3 "	=	5
" " " " 4 "	=	1

Diagnosis under 12 months = 51

Children with no sight - only 10 recorded with Nil, but there may have been others amongst the large number on whom there was inadequate or no data.

Number with Spectacles = 31 + 4 with tinted spectacles.

\*Records have not been good enough - incidental clues sometimes, for example, "child not wearing his specs today".

Other than visual defects:

Total with multiple impairment	=	78
Total with 2 additional impairments	=	30
" " 3 "	"	= 14
" " 4 or more	=	8

<u>Types</u>	<u>Number of Cases</u>	<u>Percentage</u>	
Brain damage	= 24	14.1	3
Cerebral palsy	= 32	18.8	2
Epilepsy	= 18	11.0	5
Heart	= 9	5.5	
Mental retardation	= 46	27.0	1
Orthopaedic	= 11		
Perceptual motor	= 0		
Emotional/behavioural	= 9	5.5	
Hearing	= 21	12.35	4
Other	= 11		

(% of 169)

Diagnosis by other than doctor	)	2 behavioural
i.e. very rare for a defect to be recorded	)	1 hearing
without medical confirmation.	)	3 others

<u>Visual Status</u>	<u>Under 72 months</u>	<u>72 months or over</u>
Nil	8	3
Light perception	11	5
Hand movements/counts fingers	3	1
Acuity measured	16	2
Questionable	4	0
Prescription available only	4	6
No data	91	16
	N = 137	N = 32
Data available for	38	11
	27.74%	34.38%
Total group: 169		



WORKSHOP IV  
CARE AND ASSESSMENT OF PATIENTS





## VISION TRAINING

Josef Lederer and Jan Wulff

Practitioners commonly measure the visual acuity of partially sighted patients with a standard Snellen or similar letter chart designed for a viewing distance of six metres, that is, with letter sizes varying from 6/60 to 6/4.5. If the patient cannot read the largest letter at six metres and is, therefore, "legally blind", the distance between chart and patient is decreased until the largest letter is recognized, and the visual acuity is then recorded as, say  $2/60 = 6/180$ . The visual acuity so recorded is not a valid index of the patient's visual efficiency or capacity for perceiving and negotiating his environment. Indeed, the same recorded acuity may represent greatly differing "visual states", depending on a variety of factors. Some of these factors are:

- the visual acuity may be central or eccentric (peripheral) and the degree of eccentricity may vary;
- the acuity recorded may be attained only after more or less prolonged "visual search", involving random eye and/or head movements;
- the acuity obtainable may show an exaggerated dependence on object contrast and/or luminance, as well as on the luminance distribution within the visual field;
- the availability, or otherwise, of a normally functioning peripheral field of vision.

Most importantly, in many legally blind patients the basic geometry of relating visual acuity to a constant minimum visual angle does not hold. They cannot recognize a letter twice the size at twice the

distance, that is, they exhibit large variations in visual acuity with viewing distance.

The simple reason why this important phenomenon has not been generally observed is that practitioners have and do use letter charts with 6/60 (50 minute visual angle) as the largest letter(s) available. (There is a geometric inaccuracy here also. With a six metre chart placed say three metres from the patient, the letters subtend twice the tangent but not twice the visual angle).

When testing with charts containing sufficiently large letters (our charts extend to 6/360) and at different distances (one metre, two metres, three metres, four metres, five metres and six metres at least) these variations become readily evident and measurable. The phenomenon is shown by at least 50% of legally blind persons and greatly affects their visual capacity.

The typical clinical picture is one of linear, that is, constant minimum visual angle, acuity up to a certain distance most commonly between two and three metres, beyond which acuity deteriorates rapidly and, in extreme cases, may be reduced to light and movement perception only. It seems 'as though these patients' visual world terminates at two or three metres, beyond which they are almost literally blind.

It has been suggested that this represents a breakdown, beyond a certain distance, of the patient's "visuoperceptual frame of reference". However, it is undoubtedly related to changing fixation patterns. Over the limited range of linear visual acuity the patient maintains a constant, more or less steady, central or eccentric fixation pattern, together with successful visual orientation and localization of visual objects in space. At larger distances, this fixation pattern is somehow lost and replaced by random and apparently aimless visual search (eye and/or head movements). With it, visual orientation, the localization of visual objects in space, and hand-eye coordination are also lost, and visual capacity declines to virtual blindness.

This change from one fixation pattern to a less or more effective one also explains the widely differing effects of magnification of the

retinal image on the visual acuity, say two and a half times. With many, the same two and a half times magnification induces (or makes possible) a more effective fixation pattern and visual acuity increases five times or even ten times! With some others, the magnifying device, because of its limited field of view, induces a less effective fixation pattern and visual acuity decreases through it.

The above discussion will make it clear that there is a "world of difference" between the visual capacities of, say an uncorrected myope with healthy eyes and a distance visual acuity of 4/60, and that of an emmetropic patient with some retinal dystrophy and the same visual acuity. This recognition has important implications for the formulation of visual standards.

#### Fixation Therapy

The hypothesis that changes in fixation patterns cause the remarkable variations in the visual acuity of many legally blind persons, described above, leads naturally to the further hypothesis, that visual training of these patients towards more effective fixation patterns should be capable of either extending their range of linear acuity to larger distances, or of improving their visual acuity within the linear range, or both. Furthermore, that such an increase in acuity would be accompanied by an equivalent increase in visual capacity.

Since March 1977, we have given visual fixation training to selected patients of three types, viz.:

- patients with central retinal dystrophy in whom small islands of normally functioning retinal tissue remain in the macular area which, if used for fixation, give maximal acuity and successful visual orientation (compared with the pioneering work of Otto in Switzerland in this area);

- patients with total loss of central vision, in whom the best available eccentric retinal area has to be developed and utilized as an immediate and steady fixation mechanism;
- patients in whom the now better or only useful eye is a squinting eye with amblyopia ex anopsia and eccentric fixation in addition to retinal dystrophy;

The patients were selected on the basis of:

- being legally blind (central acuity);
- exhibiting significant variations in visual acuity with viewing distance of the kind described above;
- sufficient intelligence and motivation.

The results to date have been most encouraging. Most patients treated have obtained significant improvement in visual acuity, varying from a factor of two to a factor of fifteen, both with respect to their range of linear acuity and their acuity within the linear range. Most of these patients are also able to use their optical aids more successfully. All patients, too, have experienced a markedly improved visual capacity. In the words of one of them: "What used to be a vague blob across the road is now a car, a car of a certain colour and size and a car in a certain spot".

The development of visual fixation training has opened up a new and effective means of assisting partially sighted persons towards a greater mobility and improved visual capacity generally.



## Procedures

After explaining the purpose of vision training to the patient, the (usually peripheral) area of best acuity must be located. Using the patient's index fingernail held against the examiner's palm as a fixation point, a suitable target is moved into all possible para-central and peripheral locations. Having thus located the visual "off-set" required, the proportional "off-set" needed for different viewing distances is explained and demonstrated to the patient. Quite often, a two to three fold increase in acuity can be elicited during the first five minutes of this procedure.

The initial procedure of looking "off-centre" is reinforced immediately, as well as the fact that the patient must look further "off-centre" the further away the object is located.

The patients are encouraged to remember this and use it as much as possible during everyday viewing tasks so that the use of this eccentric point becomes a normal, natural phenomenon as quickly as possible. Some patients with a central scotoma have already discovered that they see better by looking eccentrically at objects and these patients respond well to encouragement that this will not affect their remaining vision and is the correct thing to do. The patients usually notice a marked improvement in this visual function within a few days of beginning to use this point, but need a great deal of encouragement to use it all the time.

We usually start with familiar objects such as television, pictures on walls or pot plants at medium distances and get the patient to work towards and away from those objects, whilst maintaining them in view; eventually looking out windows at washing on the line, moving cars and bowling "jacks", as many of our patients are or were avid bowlers.

One of the most effective ways is to find out what the patient is interested in doing and now finds difficult with his loss of vision, or can no longer manage to do, such as knitting, playing bowls, watching television, reading, playing cards, etc. and to encourage

the patient to practice these tasks *visually* for short periods each day. Once this goal of again coping with a task that was too difficult has been reached, the patient has a greater motivation to continue using this new found residual vision for other tasks.

Distance visual tasks are encouraged first, gradually working down to finer near tasks such as reading, writing, sewing and knitting. Where the patient benefits from low vision aids, these are used, and the patient is encouraged to use his best peripheral point of fixation. This involves careful instruction in the general use of the aid and then special reference to looking "off-centre" or "down the side of the barrel". When the patient begins to read for the first time, he has to learn to scan his words again before compiling them into a sentence.

The patients are seen in the Low Vision Clinic weekly at first and then fortnightly until they can use the new point of fixation automatically and comfortably. In the clinic, the visual acuity is measured at six metres, two metres and near, and often a marked improvement is noted even after the first week. During treatment sessions, the patient is asked to fixate objects at different distances and the fixation is noted. The correct point of fixation is stimulated by the patient being asked to identify the number of dots on dominoes of different sizes and at different distances, and also to identify numbers on different sized playing cards. These tasks prove invaluable in reinforcing the difference in visual angle with distance.

The Keystone Rotator is also used to teach visual tracking, fixation and pursuit. The small light fixation target is not bright enough for these patients to identify, so they are asked to follow a letter on white cardboard which is affixed to the variable-speed disc, which is rotated clockwise and anti-clockwise. The patient is asked to follow the rotation of the letter, consistently using the best retinal area. As the patient becomes more accomplished at using this best point of fixation, the tracking movement becomes steady and smooth and the target does not disappear.

The most important aspect of each visit to the clinic is to encourage the patient to use his new point of fixation all the time, rather than rely on his other senses or have to search randomly for the object, and to explain carefully and patiently the procedures that will enable him to lead a more independent life.

Active treatment varies from three to eight weeks, with an average of five weeks.

## Results

During 1979, thirty-two patients were treated, all of whom had a central scotoma. Most of the patients (twenty-seven) had macular degeneration, two had thyroid optic atrophy, two pseudo-xanthoma elasticum and one a history of rubella. It is important for these patients to realize that we cannot give them the vision they have lost, but only assist them to use what they have left more advantageously. Five patients assessed were rejected for treatment because they already had adequate fixation or did not appear to be sufficiently motivated to benefit from the treatment.

Of the thirty-two who commenced treatment, thirty-one had 2/36 or worse visual acuity (remaining one 2/18) and the maximum improvement obtained was from 2/60 to 2/4 and N.5 comfortably.

It was encouraging for us to note such a marked improvement in visual acuity, but the improvement in mobility of these patients is equally important, yet difficult to measure. All patients reported a remarkable improvement in mobility and regained confidence to do many of their everyday tasks they could not previously manage, such as shopping and cooking. Most of the patients can watch television again and many (fourteen) can read N.5 comfortably.

Age does not appear to be a limiting factor, as our eldest patient was ninety-one years and improved from 2/60 to 2/9 and N.12, with a marked improvement in mobility. He is still able to supervise in his dental

practice in the city.

The patients who received the best results were those who were most motivated and desperately needed an improvement in visual function to fulfil their daily needs. For example, a senior executive, who at fifty-seven years was faced with an early retirement and with having to relinquish his senior position, improved from 2/36 to 2/5 and N.10 unaided. He can now read type-written copy unaided, thus enabling him to communicate at board meetings without embarrassment. He looks forward to a happy and rewarding retirement on completion of his challenging career.

Not only is there a marked improvement in acuity and mobility of the patient, but the patient can also perceive objects in his visual field much more quickly. Instead of having to search for the object, he can locate it immediately and can localize it correctly in its environment. It would appear that this new point of fixation takes on the function of the once useful fovea and that all the surrounding retinal areas become related to this new point of fixation, thus enabling immediate localization of a point in its environment. The frustrating, searching eye movements are eliminated. This, in turn, enables the patient to move in strange surroundings, in the street and in shops.

Altogether there appear to be four main results:

- the outstanding improvement in the patient's outlook on life and ability to cope with everyday tasks;
- the significant improvement in visual acuity for near and distance;
- the lack of time lapse before localizing objects in their environment;
- the correct localization of these objects when perceived.



The major factor contributing to these results is an intelligent and sufficiently motivated patient, who wants to make the best use of his residual vision.

Some details of the thirty-two patients covered by this report are given below. It should be emphasized that all of these patients who have been followed up during 1980 so far have fully maintained the gains and improvements achieved at the termination of training.

We wish to thank the staff and management of the Royal Blind Society of New South Wales for their encouragement and support in this work.

#### Patients' Summary

Mrs. A., 78 years: right aphakia, macular degeneration. Initial visual acuity 1/60, final visual acuity 2/60. Patient can manage housework and cooking much more easily.

Miss A.A., 16 years: macular degeneration. Initial visual acuity 2/36, final visual acuity 2/36. N.18 with magnifier. Managing own florist shop, moving around the street very well, does not like reading.

Mr. A., 51 years: protein polar choroidal retinal sclerosis. Initial visual acuity 2/60, final visual acuity 2/60. N.36 unaided. Building his own house, concreting and carpentry without assistance.

Mrs. B., 35 years: combined retinal dystrophy. Initial visual acuity 2/60, final visual acuity 2/60. Managing housework and children well, reading a little.

Miss B., 68 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/18. N.8 with magnifier. Very pleased with improvement in ability to see knitting, sewing and reading well.

Mrs. C., 62 years; macular changes. Initial visual acuity 2/60, final visual acuity 2/12. N.14 with magnifier. Very pleased with progress,



as can now watch television, read a little and is very mobile in the street, catching public transport, etc.

Mr. C., 91 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/9. N.12 with aid. Far more mobile, is looking naturally to side and is at present on a lecture tour in his profession as he can now read and write comfortably.

Mr. C., 82 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/60. Can now watch television and is incredibly mobile in the street.

Mr. C., 78 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/4. N.5 easily. Managing to run his own sheep property, including mustering sheep, keeping the account books and read, all of which he was unable to do prior to training.

Mrs. C., 75 years: macular degeneration. Initial visual acuity 2/36 final visual acuity 2/12. N.6. Managing to read all magazines, watch television, sew on machine and by hand; is completely self-sufficient.

Mrs. D., 84 years: macular degeneration, cataracts. Initial visual acuity 2/36, final visual acuity 2/9. Reading well, playing cards, watching television.

Mrs. D., 71 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/9. Managing to paint, reads and gardens quite easily, all of which she was unable to do prior to training.

Mr. G: macular degeneration. Initial visual acuity counting fingers, final visual acuity 2/9. Can now play bowls, read, watch television and is assisting relatives by counting cash in their shop.

Miss H., 68 years: optic atrophy. Initial visual acuity 2/36, final visual acuity 2/4. Is now completely self-sufficient, can read letters and watch television.

Mrs. H., 80 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/24. Far more mobile as can now cross roads on

her own, watch television and is more confident in looking after herself.

Mrs. J., 72 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/9. N.5 with aid. Can read well, is knitting and sewing comfortably.

Mr. K., 55 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/18. N.14. Far more mobile, delighted to be able to write shopping lists again, read and write, can read music also and thus his time is fully occupied again.

Mrs. L., 76 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/18. Watching television, reading, sewing and housework all far easier now.

Mrs. L., 69 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/9. N.5. Reading and writing well, could write on all Christmas cards for the first time and writes letters regularly.

Mrs. L., 74 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/6. N.5. Completely independent again, can read and sew and look after herself.

Mrs. M., 47 years: pseudo-xanthoma elasticum. Initial visual acuity 2/60, final visual acuity 2/9. N.4.5. Reading and watching television again, renewed confidence in public transport.

Mr. M., 54 years: thyroid optic atrophy. Initial visual acuity 2/36, final visual acuity 2/18. N.5. Watching television, reading large print books, writing own cheques again.

Mrs. Mc., 40 years: macular degeneration. Initial visual acuity 2/18. N.8 with aid. Does not like reading, but manages all her own housework very well.

Miss Mac., 20 years: high myopia, optic atrophy. Initial visual acuity 2/36, final visual acuity 2/18. Extremely variable visual acuity with poor fixation, but increased confidence especially in strange

surroundings.

Miss M., 20 years: rubella embryology. Initial visual acuity 2/60, final visual acuity 2/36. New girl, has now confidence to work, catch public transport, look after herself, after being completely dependent on mother.

Mr. P., 76 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/12. N.8 with magnifier. Much more independent and more confident, reads and watches television, bowls.

Mr. R., 79 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/9. N.5 with magnifier. Delighted, can paint house and do the garden.

Mr. S., 81 years: macular degeneration. Initial visual acuity 2/60, final visual acuity 2/18. Variable N.5 with magnifier. Managing very well, catching public transport and shopping.

Mrs. V., 59 years: initial visual acuity 2/18, final visual acuity 2/5. Excellent, very pleased, sewing, reading, writing and doing crosswords.

Mrs. W., 74 years: chronic ischaemic retinopathy. Initial visual acuity 2/60, final visual acuity 2/18. N.5 with aid. Excellent, delighted as can now sew and work for herself.

Mr. M.W., 57 years: macular degeneration. Initial visual acuity 2/36, final visual 2/5. N.10 without aid. N.4.5 with magnifier. Excellent, can now read minutes at board meetings.

Mr. J.W., 73 years: retinal dystrophy. Initial visual acuity 2/36, final visual acuity 2/12. Managing better, watching television, playing golf.

## THE DISCUSSION GROUP AS A RESOURCE FOR LOW VISION PERSONS

Julian Walsh

A comprehensive approach to low vision care involves considerably more than the provision of low vision aids. Training in the use of aids and an assessment of individual motivation and adjustment are, for example, also necessary. In regard to individual motivation and adjustment, realistic expectations and maximum use of residual vision can be encouraged through a discussion of feelings and reactions to sight loss and other relevant areas of need, for example, mobility, recreation and employment, can be appreciated and appropriate referrals made. In the absence of such discussion the provision of low vision aids is likely to be of limited value at best.

Experience indicates that there are particular emotional problems faced by those in the low vision area (Herkes, 1978). The ambiguity of being neither fully sighted nor blind is one commonly expressed difficulty. Others include resentment of misunderstanding by sighted persons, embarrassment in using low vision aids and loss of identity and self-esteem. A consumer survey conducted by the writer at the Adelaide Low Vision Clinic in 1978 (Walsh, 1979) asked the question, among others, whether a low vision discussion group would be of benefit to persons visiting the clinic, since the time available for individual discussion of problem issues was limited, even though seen as essential and appreciated by patients. Response to the question was an enthusiastic affirmative that such a need existed, and that such a service would provide an opportunity for a comprehensive discussion on low vision problems and, more importantly, approaches to overcoming or minimizing such problems. As a result of this expressed wish of clinic patients, planning was commenced for a low vision discussion group.

The usual issues associated with group formation had to be faced initially viz. selection of members, number of participants in the group, choice of venue, choice of leader, number and organization of group meetings, etc. The writer as social worker with group work



experience was responsible for forming and leading the group. Selection of members was seen as a crucial issue. Group work experience indicates that careful selection of individuals capable of discussing issues without dominating or withdrawing provides the best opportunity for productive discussion. The extremes of aggression, anxiety, timidity and depression are perhaps best dealt with in individual discussion instead of, or prior to, group involvement.

As well as the type of person most likely to benefit from group involvement, a decision was required as to whether the group would be limited to low vision persons or include sighted persons, members of family, etc. It was strongly felt by all concerned that sighted partners, other members of family or close relatives should be included, since they were closely associated with problems, many of which could not realistically be discussed without their involvement. Also, information could be provided in a group which would be of considerable benefit to sighted persons in understanding low vision. Finally, apart from their contribution, sighted persons were able to provide essential transport.

Accordingly, eight adults meeting the above criteria in an individual interview accepted an invitation to participate in the initial Adelaide low vision discussion group in 1979. Subsequent groups have had up to twelve members and included participant/observers, for example, low vision clinic personnel. Between eight and twelve members provide an adequate balance between sufficient numbers for discussion without having too many for full individual participation. The initial group comprised five low vision persons, three of whom were accompanied by sighted partners; subsequent groups have included a limited number of adult and teenage family members.

Group members have covered a wide cross section of visual impairment causes including diabetic retinopathy, glaucoma, cataracts, retinitis pigmentosa, optic atrophy and macular degeneration. Most have been in the early diagnosed stages of low vision, although it has been found useful to include at times those with a longer history of visual impairment where this contributes to discussion. Ages range from sixteen to seventies and the group mix includes people from working, retirement, unemployed and home duties areas so that ample opportunity



is provided for different viewpoints.

Each group has been involved in the choice of venue and for the most part a small central community based location is preferred, for example, library meeting room. Alternatively, groups have met in private homes where adequate space is available and this has been found to be equally suitable.

The particular format which has proved most popular with group members comprises six meetings of approximately an hour and a half duration, with a different resource person for each discussion, namely ophthalmologist, optometrist, occupational therapist, orientation and mobility instructor and social worker, with the final discussion being set aside for summarizing. The accent is on free discussion rather than on lectures, so that individuals can have maximum opportunity to discuss relevant low vision issues of concern to them. Groups have expressed a preference for this freedom within a structure, rather than the alternative structureless format which promotes discussion on any area of concern to individuals in a random fashion. The general consensus of opinion from participants is that the chosen approach focuses on particular areas of concern, helps to avoid repetition and promotes comprehensive discussion, while in no way limiting freedom of expression. Nevertheless, each group is initially given the opportunity to negotiate the format members prefer.

The aims of the low vision discussion group as indicated are as follows:

- to provide the opportunity to discuss problems and reactions related to sight loss in a supportive atmosphere with a view to promoting positive adjustment to low vision;
- to provide professional resources to discuss particular aspects of concern to individuals in the group, for example, ophthalmologists;
- to provide an opportunity for sighted partners, etc., to be involved in discussions;

- to provide a venue for practical information giving and the exchange of productive ideas.

It is worth emphasizing that group therapy with a declared psychotherapeutic focus was and is considered inappropriate for the achievement of these aims, and particular personality problems, for example extreme depression, are, as previously indicated, better helped by alternative means.

The first of the six group meetings is introductory in nature, aimed at promoting a relaxed atmosphere for discussion and the general "getting to know you" of any new group. Typically, diagnoses and visual activities are compared and there is a general expression of problems. Questions posed by the leader include what is low vision, what are the experienced problems of low vision persons and what are some typical feelings experienced by low vision persons in the group. Common responses to the latter question include frustration, anger, depression, isolation, embarrassment, withdrawal and fear. Commonly experienced problems nominated include crossing roads, reading mail, cooking, using the telephone, watching television, reading books and newspapers, not recognizing faces, loss of friends and social contacts, loss of employment, shopping, mobility, provision and use of transport. Also mentioned are lack of understanding by sighted persons "because I don't look blind" and overprotection by family, etc. Sighted persons in the group mention from their point of view that often they don't know how to offer help, or their well intentioned offers are often rejected by excessively independent individuals.

At the end of the discussion on problems and feelings there is usually general expression that individuals didn't realize that others had the same problems as themselves, since low vision persons as a group are not easily identified. Hence there is a lessening of feelings of isolation and, as individuals recognize that "it's not just me", there is a realization of the futility of clinging exclusively to an identity as either sighted or blind.

The discussion involving the ophthalmologist as resource person is commonly concerned with an explanation of major eye diseases and the structure and function of the eye in simple terms - "what all those

big words mean"! Disappointment has often been expressed that individual ophthalmologists are unwilling or unable to provide such simple, meaningful explanations of individual diagnoses. Group members feel that they are either not considered able to cope with the knowledge or not seen as individuals with feelings about the diagnosis attached to their name - apart from that "the doctor is just too busy". There is considerable interest in the variability of visual impairment according to diagnoses and the variation within a particular diagnosis according to lighting, time of day, general health (especially diabetics), etc. This area seems to be a particular revelation to sighted persons in the group who cannot understand how their low vision partners can see some things but not others, or vary in sight from morning to night. In the same context, the low vision person expresses the feeling that he often is made to feel that he is "putting it across" and "pretending to be more blind than he is". Finally a major point made in this session is that this is the first time some persons have had their eye problems explained to them and also, that if people knew what was going on or what to expect when losing their sight, they would have been less anxious.

The optometrist from the Low Vision Clinic discusses the prescription and use of optical low vision aids, as not all low vision group members have been seen at the clinic. Important points from this discussion concern the need to persevere with aids and to be trained in their use, and the frustration experienced at times by those whose visual impairment does not allow them to make use of aids found beneficial by other low vision persons. Another point made is that aids found useful at one time may diminish in value or cease to be of use because of changes in visual acuity. A loan system rather than outright sale of aids is worth consideration in overcoming this problem. Also frequently mentioned is the embarrassment individuals feel in using low vision aids, for example, monoculars. The whole question of embarrassment has been discussed in a variety of contexts during group meetings and general agreement reached that such feelings tend to become exaggerated through sensitivity to being "different", and should not be allowed to deter the individual from whatever he or she wants to do. Further, people are not laughing at the low vision person as much as they imagine and for those who are, "it's their problem" unless the low vision person allows himself to be "put off". A final issue concerning low vision aids is the importance of correct



lighting in homes, etc.

The session involving the mobility instructor examines orientation and mobility assistance available, together with aids used in training. Some fairly typical areas of concern generally mentioned are difficulties crossing roads, hailing buses and moving around in crowded city areas. One interesting comment in this context is that low vision people at times have trouble getting assistance, or even basic courtesy, because they "don't look blind"! This in turn has led to a discussion on whether or not to use mobility aids. Again the feeling of "being a fraud" has been mentioned because individuals have part sight and public attitudes are assumed to be that mobility aids, such as long cane and guide dog, are for "blind" people with no sight. Again, others feel that much more help and understanding is afforded to those who do use mobility aids, even sparingly, and that sighted people, especially motorists, can't be expected to understand automatically. A final thought is that any negative feelings about using mobility aids are easier to cope with than frustration and "abuse from sighted people".

An interesting experience for sighted persons in the group during this session is to try on modified spectacles which simulate various types of visual impairment. Experience such as this helps towards understanding of the problems and confusion of low vision, often much more than verbal explanation. The same applies to films on major eye diseases and helpful and unhelpful ways of assisting visually impaired persons shown at this time.

The occupational therapist takes part in a discussion on other important areas for the low vision person including activities of daily living, recreation, leisure and employment. Aspects of activities of daily living which promote considerable discussion are personal care and household management, especially cooking and gardening, and shopping. In these areas especially, advice on "better ways of doing things" is often traded. Practical demonstrations, such as methods of dialling a telephone, are included. In regard to recreation and leisure facilities, one common difficulty encountered is that low vision persons tend to withdraw from such involvements because of difficulties encountered. The common impression

is that low vision persons cannot participate in many sporting activities, but the extensiveness of a list drawn up of what is available often comes as a surprise. Here again, the willingness to try something new is stressed as important. The potential for joint recreational activities with sighted partners, for example, tandem cycling, camping, hiking and boating, is also discussed together with community resources for leisure and study pursuits. Again a list of such interests in which low vision group members are involved covers a surprisingly wide area and is of practical value to those looking for "ideas".

The concluding session with the social worker involves a summary and reinforcement of areas previously covered and an evaluation by group members of what value the discussion groups have been to them. Reactions to this question have been both positive and varied and include an appreciation of the opportunity to discuss issues where, even if no solution can be found, problems are minimized and put into perspective, an opportunity to explore new ways of functioning and coping with difficulties and general confidence building and reduction in fear of the unknown. Also seen as important gains are the provision of practical information and resources in a concise form and the experiencing that others face similar problems. Low vision participants find that they are not so different and isolated as they had imagined. For sighted persons, common responses included a better understanding of the needs and problems of the low vision person, low vision aids and the nature and implications of low vision. The impression is certainly given that needs are being met!

A final point concerns the issue of group leadership. It is seen as valuable for the overall group leader to have had some prior experience in groupwork in order to maintain a constructive focus and provide opportunity for full participation from all members without individual domination or group pressure. At the same time, issues which may be of importance to individuals but considered inappropriate for group discussion can be noted and opportunity provided for individual discussion at a more appropriate time. The point has previously been made that intensive group psychotherapy is considered an inappropriate focus for the low vision group as described. Leading a group such as this is not unduly difficult, but some knowledge and



experience of group dynamics contributes greatly towards group cohesiveness and maximizes the opportunity for productive experience.

In summary, the low vision discussion group is seen as assisting low vision persons to establish a positive self-image and improve self-esteem, since the way such a person sees *himself* influences how he will behave much more than a diagnosis or visual acuity reading. The group is not designed as an exercise in fatalism or as a game of "ain't it awful", but rather seeks to promote a vitally important positive attitude and to contribute towards the maintaining or regaining of an independent lifestyle for those in the low vision area.

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EDGE DETECTION AS A MEASURE OF FUNCTIONAL VISUAL PERFORMANCE  
OF LOW VISION PATIENTS

Peter Cunningham

*As an article on this subject is currently awaiting publication, the author has been unable to submit a detailed report. The following, therefore, is a summary only.*

The measurement of the visual performance of low vision patients has long been based on standard clinical techniques such as visual acuity, fields of view, etc., but the inadequacy of such techniques in providing a true indication of real visual performance has continued to frustrate all specialists working in the low vision field. The introduction of the measurement of the contrast sensitivity function (CSF) has been heralded as a major step in providing the missing information on functional performance. However, the measurement of the CSF is time consuming and inadequate as a standard clinical technique. It employs the use of a sine wave grating of variable contrast and spatial frequency, although objects in the real visual world are not truly represented by such a grating. Most of the objects are relatively large and it has been shown that with such objects, the contrast of the edges is the most important factor in their detectability.

It was therefore decided to measure the ability of low vision patients to detect an edge of variable contrast and relate this edge detection score to their functional visual performance of everyday visual tasks. The variable contrast edge was produced on a cathode ray oscilloscope screen and measurements were included in each patient's routine clinical examination.

Results of examinations of sixty low vision patients indicated that edge detection was a very good predictor of visual performance, particularly of mobility. The results were also extremely helpful in providing the missing information that we lack in our understanding

of exactly what each patient perceives and why he may perform in excess or below that predicted from other clinical techniques.

With so much emphasis put on a reliable measurement of visual performance of low vision patients, the measurement of edge detection is a quick clinical test that, when supplemented with other standard tests, provides a new outlook on the functional performance of a number of everyday visual tasks. Edge detection is also useful in following the progression of an ocular disease; a greater loss of edge detection implies a more advanced disease and a reduction in the patient's ability to cope visually.

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